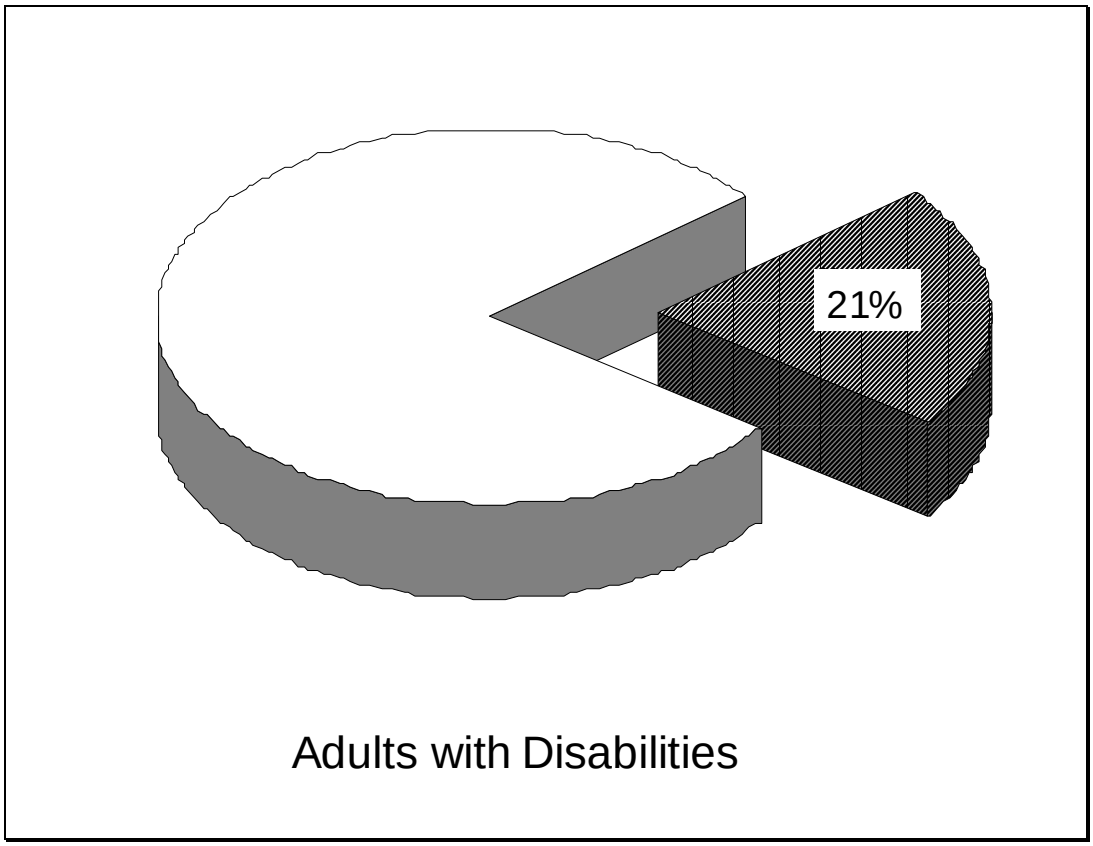
RHODE ISLAND DISABILITY CHARTBOOK



Disability and Health Program
Rhode Island Department of Health

Lincoln C. Almond
Governor

Patricia A. Nolan, MD, MPH
Director of Health

RHODE ISLAND
DISABILITY CHARTBOOK

Findings from an Analysis of
the 1998 Rhode Island
Behavioral Risk Factor Surveillance System

June, 2000

Disability and Health Program
Rhode Island Department of Health

"Safe and Healthy Lives in Safe and Healthy Communities"

Acknowledgements

First, we wish to acknowledge the original source of this data: the Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1998. In Rhode Island, Jana Hesser, Ph.D. in the Office of Health Statistics, is the BRFSS Coordinator, and MACRO International, Inc. conducted the survey.

David Hamel, former Manager of the Disability and Health Program, now Project Director, first proposed development of this Chartbook, as well as a public forum for discussion of the data.

Hanna Kim, Ph.D., epidemiologist for the Disability and Health Program, completed the graphic and written analysis of the BRFSS data pertaining to disability. Jeanne Panarace and Mary Speare provided editorial support. Clerical support was provided by Jo-Anne Robitaille.

Internal review and commentary was provided by the Department of Health Surveillance Group, chaired by John Fulton, Ph.D.

External review and commentary was provided by Leo Canuel, Director, PARI Independent Living Center; Lorna Ricci, Executive Director, Ocean State Center for Independent Living; Bob Cooper, Executive Secretary, Governor's Commission on Disability; staff of the Brown University Population Studies Training Center, under the direction of Dennis Hogan, Ph.D.

For Additional Information

Disability and Health Program
RI Department of Health
Division of Family Health
3 Capitol Hill, Room 302
Providence, RI 02908-5097

Hanna Kim, Ph.D., Epidemiologist
(401) 222-4607; hannak@doh.state.ri.us
or
Jeanne Panarace, Manager
(401) 222-5957 FAX;
jeannep@doh.state.ri.us

Financial support for this publication, the addition of disabilities questions to the basic survey, and a portion of the cost to administer the BRFSS was provided by the Centers for Disease Control and Prevention, National Center for Environmental Health/Office of Disability and Health, under Cooperative AgreementU59/CCU 106953-04

TABLE OF CONTENTS

List of Figures

List of Tables

EXECUTIVE SUMMARY

This Rhode Island Disability Chartbook presents the findings from an analysis of the 1998 Rhode Island Behavioral Risk Factor Surveillance System (RIBRFSS) survey data.[1] The 1998 RIBRFSS survey consisted of 3,602 telephone interviews with a representative sample of the non-institutionalized Rhode Island adults aged 18 and older. The survey collected extensive information on Disability/Quality of Life, and a variety of other health-related information. Results will provide a firm basis for developing initiatives to enhance the employment, income, education, access to health care, and health/wellness of people with disabilities. Important findings are listed below.

Prevalence of Disability and Major Conditions

- Approximately 21% of the Rhode Island non-institutionalized adult population had experienced some degree of disability (an estimated 155,000 persons): 5.5% had a severe disability (an estimated 41,000 persons) and 15.5% had a moderate disability (an estimated 114,000 persons).

- The most frequently reported impairments or health problems were those associated with musculo-skeletal conditions (i.e., back or neck problems; arthritis; and bone or joint problems).

Demographic Characteristics

- The rate of disability increased substantially with age, ranging from 14% for those aged 18-44 to 45% for those over 75.

- The rate of disability was higher among women, and persons with lower education and lower household incomes, due partly to high proportion of the elderly in these groups.

- Employment rate was strongly associated with disability status. Among working age (18-64) adults, 31% of persons with severe disabilities, 62% of persons with moderate disabilities, and 81% of persons with no disabilities were either employed for wages or self-employed.

- The differences in employment rates by disability status clearly led to the disparities in annual household incomes. Among those aged 18-64, 58% of persons with severe disabilities, 37% of persons with moderate disabilities, and 20% of persons with no disabilities had annual household incomes less than $25,000.

Health Status

- Persons with disabilities had much poorer health than persons without disabilities in all measures of health status, including perceived general health, physical health, and mental health.

    - General Health:
      59% of persons with severe disabilities, 32% of persons with moderate disabilities, and 6% of persons without disabilities reported that their general health was poor/fair.

    - Physical Health:
      46% of persons with severe disabilities, 22% of persons with moderate disabilities, and 4% of persons without disabilities reported that their physical health was not good more than 15 days in the previous month.

    - Mental Health:
      28% of persons with severe disabilities, 16% of persons with moderate disabilities, and 6% of persons without disabilities reported that their mental health was not good more than 15 days in the previous month.

Health Care Access and Utilization

Health Care Coverage

- Among those over 65 of age, there were little differences in health care coverage rates across disability status due to Medicare, and the coverage rates were as high as 99%.

- Among those aged between 18 and 64, health care coverage rates varied: persons with severe disabilities had the highest health care coverage rate (92%), followed by persons with no disabilities (89%). Persons with moderate disabilities had the lowest rate (83%).

Type of Health Care Coverage

- The majority of persons with no disabilities had an employer-paid plan (71%), whereas the majority of persons with severe disabilities had a government-paid plan (75%).

- Persons with moderate disabilities were less likely to have a government-paid plan (e.g., Medicare) than persons with severe disabilities due to their medical conditions, and also less likely to have an employer-paid plan than persons with no disabilities due to their lower rate of employment.

Unmet Need for Health Care:

- Among those aged 18-64, persons with moderate disabilities reported the highest rate of unmet need for health care because of the cost (20%). Although persons with severe disabilities reported a high rate of health care coverage, they also reported a high rate of unmet need for medical care (16%). Persons with no disabilities reported the lowest rate of unmet need (7%).

Health Risk Behaviors

- Persons with disabilities were more likely to be obese and less likely to have leisure-time physical activities than persons without disabilities. These behaviors might lead to other secondary conditions among people with disabilities.

  - Obesity:
    27% of those with severe disabilities, 23% of those with moderate disabilities, and 15% of those without disabilities reported obesity.

  - No Leisure-time Physical Activity:
    57% of those with severe disabilities, 34% of those with moderate disabilities, and 27% of those without disabilities reported no leisure-time physical activity in the previous month.

Women's Preventive Care

- Women with severe disabilities were less likely to have received Pap smear and mammogram as recommended than women with moderate or without disabilities.

  - Pap Smear:
    32% of women with severe disabilities had not received a Pap smear in the previous 3 years, compared with 14% of women with moderate disabilities and 14% of women without disabilities.

  - Mammogram:
    28% of women over 50 with severe disabilities had not received a mammogram in the previous 2 years, compared with 15% of women with moderate disabilities and 17% of women without disabilities in the same age group.

Life Satisfaction

- The gaps seen in the above descriptions can be linked to the disparities in the life satisfaction reported by disability status groups. 21% of persons with severe disabilities, 10% of persons with moderate disabilities, and 4% of persons without disabilities reported that they were not satisfied with life in general.

INTRODUCTION

The Rhode Island Department of Health's Disability and Health Program is funded through a state capacity building grant from the Office of Disability and Health, Centers for Disease Control and Prevention. In 1997, Rhode Island was one of fourteen states to receive 4-year CDC funding to develop and focus public health resources on issues relating to people with disabilities.

The mission of the Disability and Health Program (DHP) is to promote health and wellness for people with disabilities, and prevent secondary conditions. An underlying principle encompassed in the DHP mission is that disability should not equal poor health. A second key principle is, in most cases, that secondary conditions are preventable.

The DHP has developed a number of primary objectives in working towards achieving its mission. These include assuring access to primary health care (including oral health) for people with disabilities. This objective includes ongoing training of health care providers to better serve their patients who have a disability. The DHP has implemented a number of community interventions focusing on various points in a person's life span, including an array of health promotion activities. Another objective, which includes the "Rhode Island Disability Chartbook", is establishing a sustainable data collection system that will identify health risk factors, services gaps, needs, and help evaluate effectiveness of programs for people with disabilities.

The findings presented in this publication clearly demonstrate why there should be a public health focus for people with disabilities, and the importance and necessity for interagency collaboration in developing quality services for people with disabilities. The DHP estimates for the number of adults with disabilities in Rhode Island, prior to the 1998 BRFSS, was considerably lower than the present finding of 21% of the population. Up to this time, all agencies serving people with disabilities were also considerably underestimating the number of Rhode Islanders with disabilities. The findings also provide important baseline data for Rhode Island's progress towards achievement of Healthy People 2010 objectives on disability and secondary conditions.

A future plan for use of the "Rhode Island Disability Chartbook" is to promote a Disability Data Forum. This forum will bring advocates, service providers, consumers and policy makers together in order to discuss the implications of the data, and ways to promote health and wellness for people with disabilities. The "Rhode Island Disability Chartbook" will be updated on a regular basis.

Part I :

Prevalence and Demographic Characteristics

Prevalence of Disability

Major Conditions

Disability and Age

Disability and Gender

Disability and Race/Ethnicity

Disability and Education

Disability and Income

Disability and Employment

Prevalence of Disability

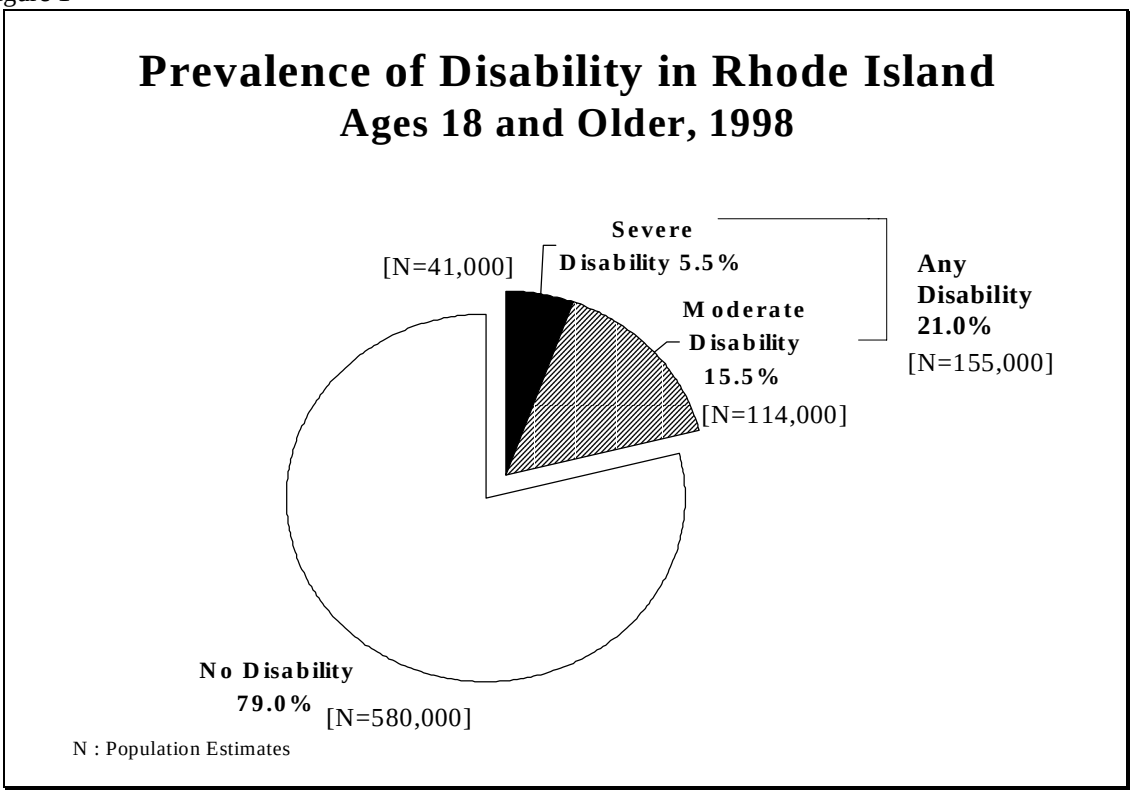
According to the 1998 Rhode Island Behavioral Risk Factor Survey, 21.0% of the non-institutionalized Rhode Island adult (ages 18 and older) population had some degree of disability due to an impairment or health problem, or an estimated 155,000 people (see 'Measurement of Disability' in Appendix).

Those 21.0% of people with disabilities were divided into two categories; people with severe disabilities and people with moderate disabilities. 5.5% were classified as having a severe disability (estimated as 41,000) and 15.5% were classified as having a moderate disability (estimated as 114,000).

When one takes into account the estimated 9,100 people with disabilities who live in nursing homes, and other residential facilities for people with developmental disabilities and people with mental illness, the total number of Rhode Island adults with disabilities would be higher.

155,000 Rhode Island non-institutionalized adults had some degree of disability; 41,000 had a severe disability and 114,000 had a moderate disability.

Figure 1



Major Conditions

Q : "What is the MAJOR impairment or health problem that limits your activities?" (This question was asked only of those who have disabilities.)

A wide variety of chronic conditions were responsible for disability among adults in Rhode Island. Table 1 presents the single "major condition" reported by people who were identified as having a disability.

Back or neck problems accounted for 16.1% of disability, arthritis/rheumatism for 11.4%, lung/breathing problems for 9.0%, and heart problems for 8.1%. In this survey, more than 30 percent of people with disabilities did not specify a major condition (21.1% reported other impairments and 9.8% said don't know or refused to answer).

It is clear that some conditions, such as hearing problems, were underrepresented due to the telephone survey methods. (The survey did not use TDD or TTY). According to the 1995 National Health Interview Survey, 8.6% of Americans have some degree of hearing impairment.[2]

A wide variety of chronic conditions were responsible for disability among adults in Rhode Island.

Table 1. Major Impairment or Health Problem Reported by Respondents with Disabilities

Back or neck problem	16.1 %
Arthritis / rheumatism	11.4
Lung / breathing problem	9.0
Heart problem	8.1
Fractures, bone / joint injury	7.2
Walking problem	5.9
Eye / vision problem	2.7
Depression / anxiety / emotional problem	2.7
Diabetes	1.8
Cancer	1.7
Hearing problem	1.3
Stroke problem	1.2
Hypertension / high blood pressure	0.1
Other impairment / problem	21.1
Don't know / refused	9.8
Total	**100.0 %**

Disability and Age

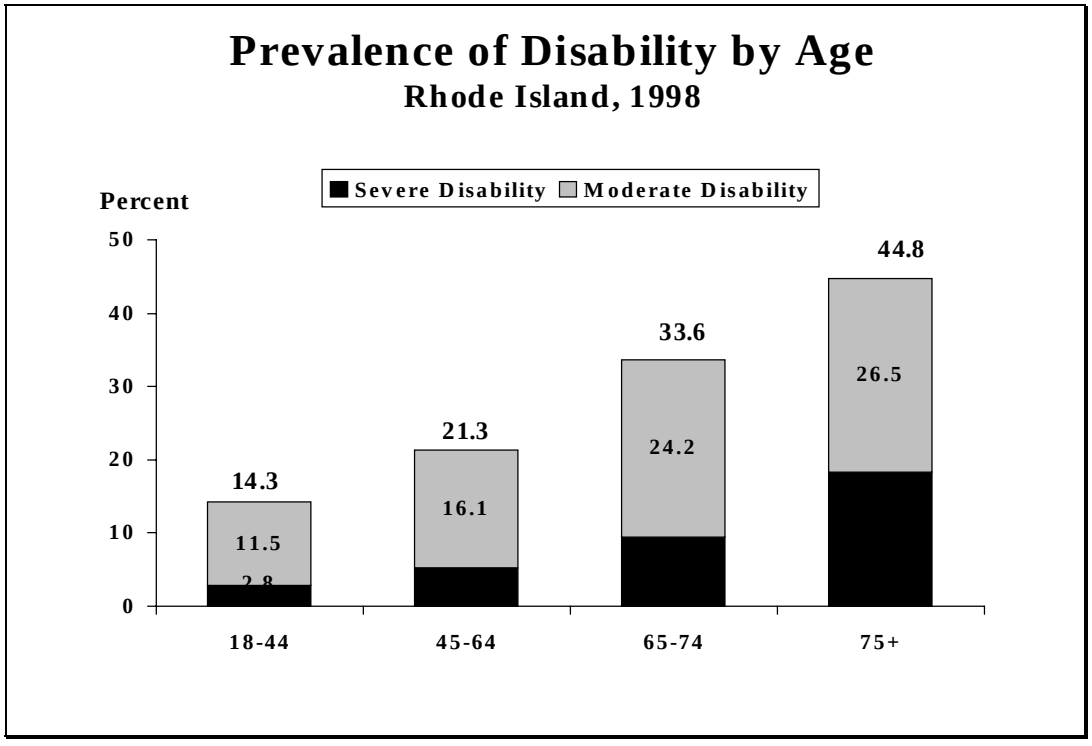
Age is among the most significant factors contributing to chronic illness and disability. As the U.S. population gets older, the number of people with a disability is expected to increase sharply in the next couple of decades.

Figure 2 shows that the prevalence of disability increased substantially with age. Nearly one half (44.8%) of people ages 75 and older had some degree of disability due to an impairment or health problem, compared with one in seven (14.3%) people ages 18-44. The prevalence of severe disability by age shows a similar pattern. It increased from 2.8% of those aged 18-44 to 18.3% of those 75 years and older. People in the oldest age group were more than 6 times as likely as the youngest people to have a severe disability.

The median age for people with severe disabilities was 57 years. The median was 51 years for people with moderate disabilities, and 42 years for people with no disabilities.

The prevalence of disability increased substantially with age. People over 75 were more than 6 times as likely as those 18-44 years of age to have a severe disability.

Figure 2



Distribution of Disability Status by Age

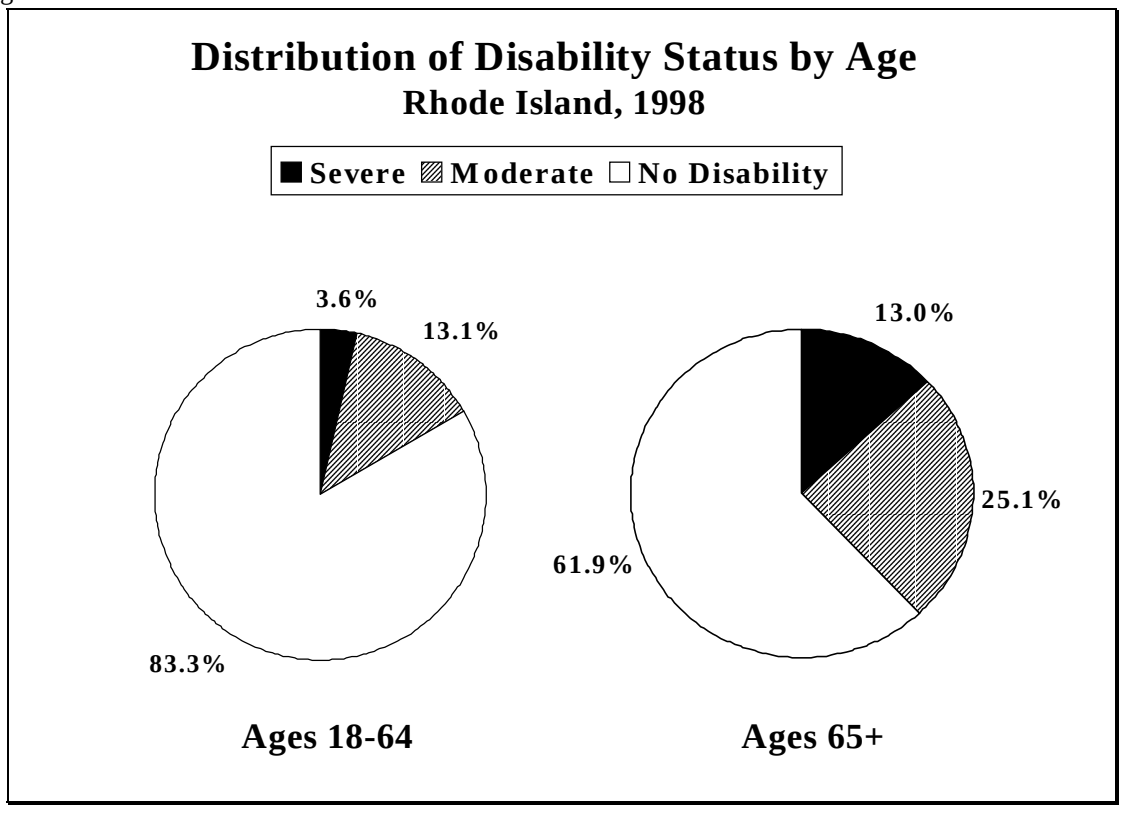
Figure 3 presents the distribution of disability status for two age groups; 18-64 and 65 or older. For persons ages 18-64, 16.7% had a disability including 3.6% who had a severe disability. For persons 65 years of age and older, 38.1% had a disability including 13.0% who had a severe disability.

Persons 65 years and older were more than three and half times as likely to have severe disabilities, and nearly twice as likely to have moderate disabilities as their younger counterparts.

However, it should be pointed out that the percentages of the elderly population who have disabilities might be underestimated because the survey excluded the institutionalized population. Since older people are more likely to reside in nursing homes (an estimated 9,100 people) and similar institutional facilities, adding in the institutionalized population would increase the proportion of disability among the elderly.

Adults 65 years and older were more than 3 and ½ times as likely to have severe disabilities as the rest of the adult population.

Figure 3



Disability and Gender

For the combined prevalence of severe and moderate disabilities, women had a slightly higher rate of disabilities than was experienced by men; 21.6% for women and 20.4% for men (see Table 2 in page 12).

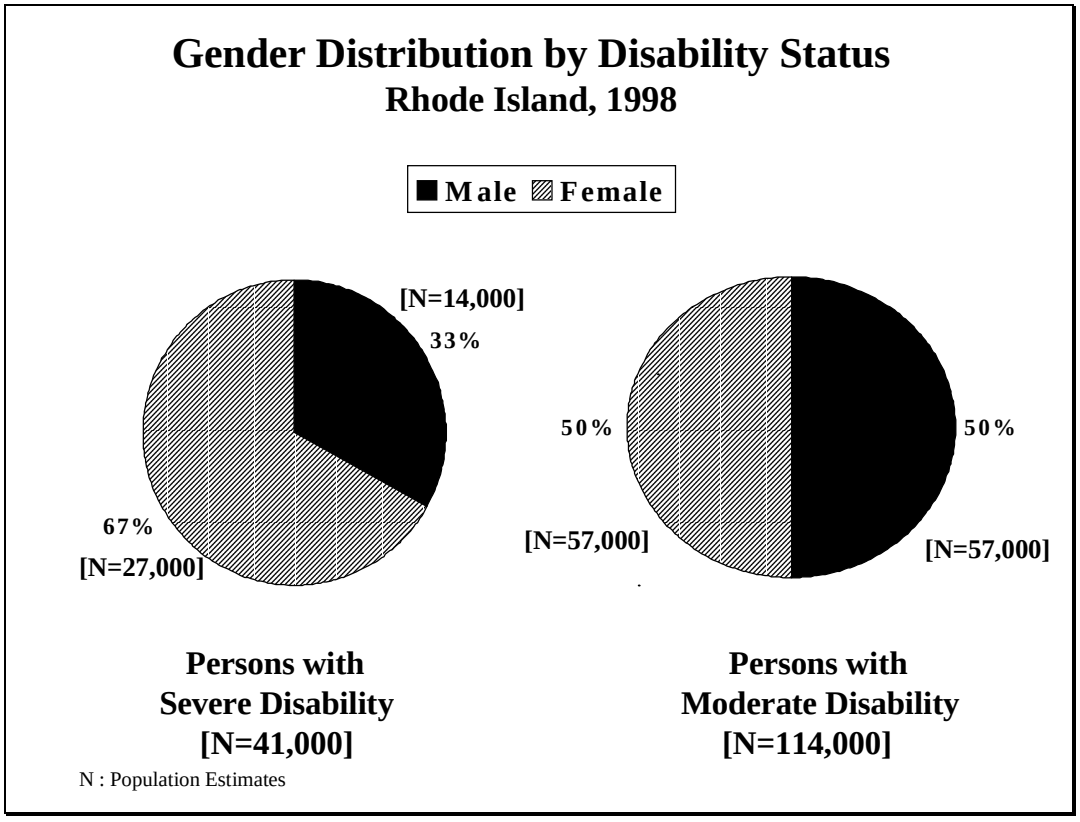
However, figure 4 reveals men and women were distributed differently according to the severity of disability.

Of the 114,000 people with moderate disabilities, 50% were men and 50% were women, or about 57,000 persons in each group.

Of the 41,000 people with severe disabilities, 67% were women. Their estimated numbers were 27,000 women, and 14,000 men. This is partly because more women than men live long enough to become elderly, and severe disability increases sharply with age.

Women accounted for two thirds of people with severe disabilities; 27,000 women and 14,000 men.

Figure 4



Disability and Race/Ethnicity

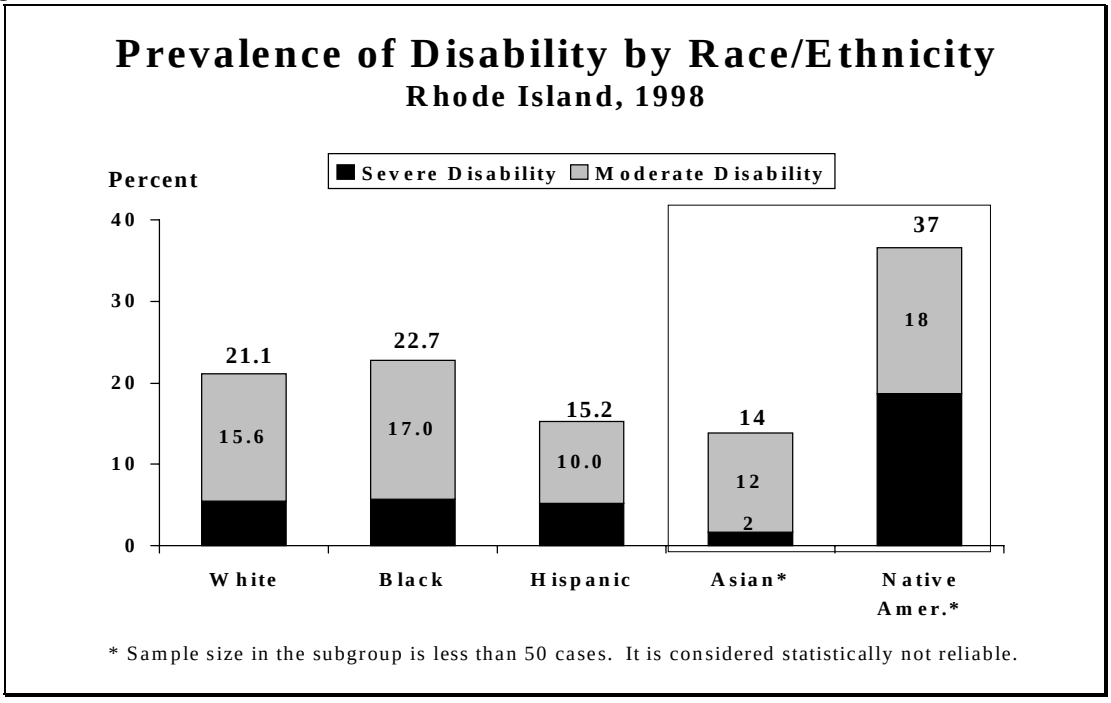
Overall, Whites and Blacks had a slightly higher rate of disabilities than Hispanics; 21.1% of Whites, 22.7% of Blacks, and 15.2% of Hispanics. The prevalence of a severe disability among these three populations shows the similar patterns; 5.5% for whites, 5.7% for blacks, and 5.2% for Hispanics.

In this survey, sample sizes for Asian/Pacific Islanders (n=49) and Native Americans (n=24) were too small to produce a reliable estimate of prevalence. Our tentative results, however, were consistent with the National Institute on Disability and Rehabilitation Research data indicating that Native Americans have the highest rate of disabilities and Asian/Pacific Islanders have the lowest rate.[3]

It should be mentioned that the age compositions of the black and the Hispanic populations in Rhode Island are younger than the white population. By comparing a younger black or Hispanic population with an older white one, real differences are confounded.

Whites and Blacks had slightly higher rates of disabilities than Hispanics.

Figure 5



Disability and Education

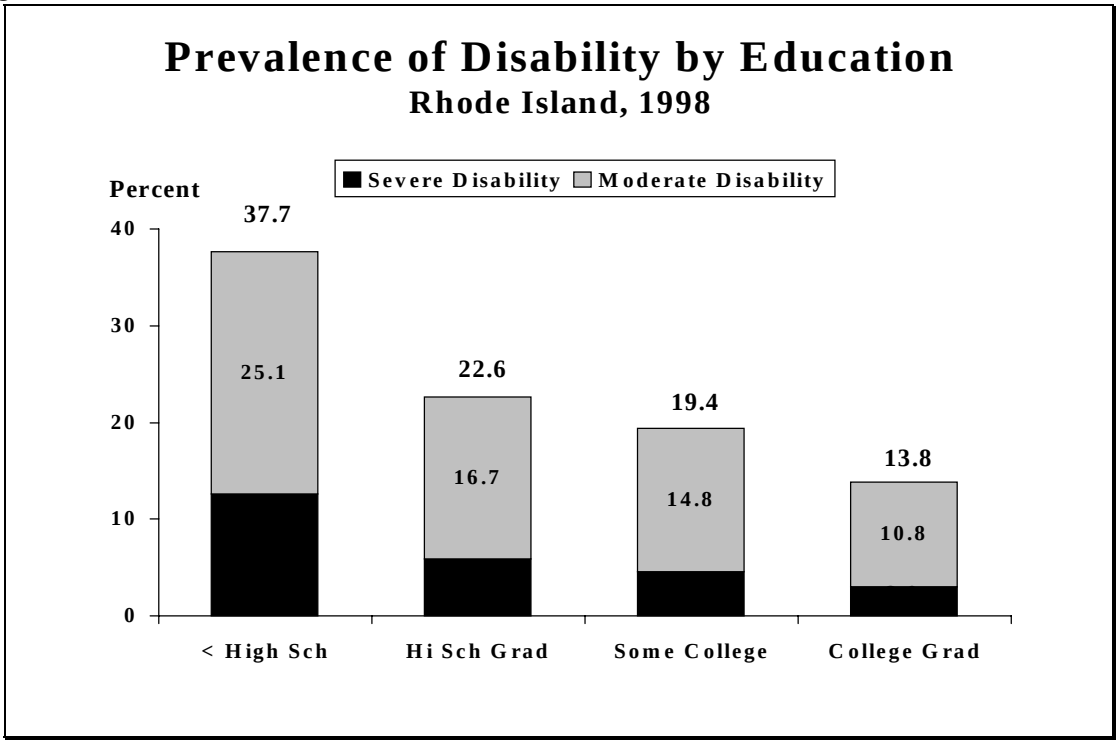
Level of educational attainment was strongly associated with disability prevalence. Respondents who attained higher levels of education were much less likely to have a disability.

Figure 6 shows that 37.7% of Rhode Island adults without a high school diploma had a disability, whereas 13.8% of college graduates had a disability. The pattern remained the same for the prevalence of severe disability; 12.6% of those who did not finish high school had a severe disability, compared with only 3.0% of those who had a college degree.

Although the prevalence of disability decreased progressively as educational level increased, the greatest differences were seen between those who had not finished high school and those who finished high school. This pattern remained basically unchanged even when age differences across educational levels were taken into account.

Persons who have not finished their high school education were twice more likely to have disabilities than persons who have finished their high school education.

Figure 6



Disability and Income

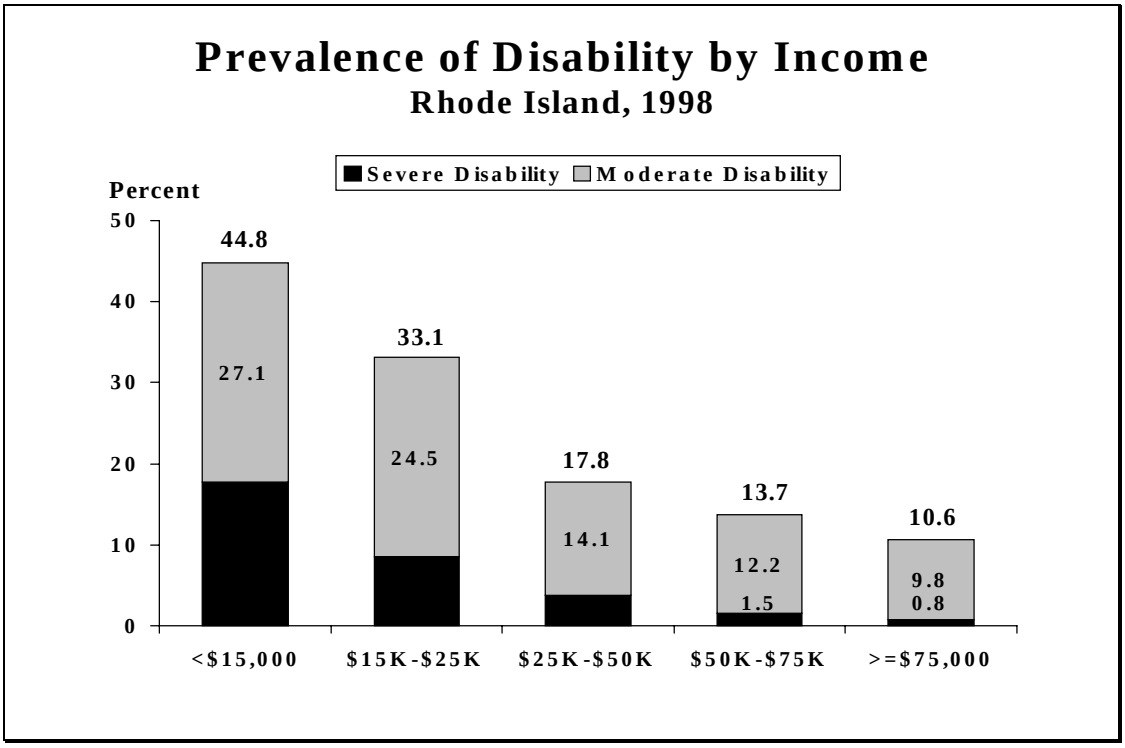
The prevalence of disability had a strong inverse relationship with household income. Persons with low household incomes were much more likely to have disabilities than persons with higher household incomes (Figure 7).

44.8% of people with annual household incomes less than $15,000 had some degree of disability, compared with 10.6% of those with household incomes greater than $75,000. In other words, persons in the lowest income group were 4 times more likely to have a disability than persons in the highest income group.

Similarly, the prevalence of severe disability decreased as household income increased: 17.7% of those with annual household incomes less than $15,000 had a severe disability, compared with 0.8% of those with household incomes more than $75,000.

The prevalence of disability decreased as household income increased. People with household incomes less than $15,000 were 4 times more likely to have a disability than people with household incomes more than $75,000.

Figure 7



Income Distribution Among Working Age Adults by Disability Status

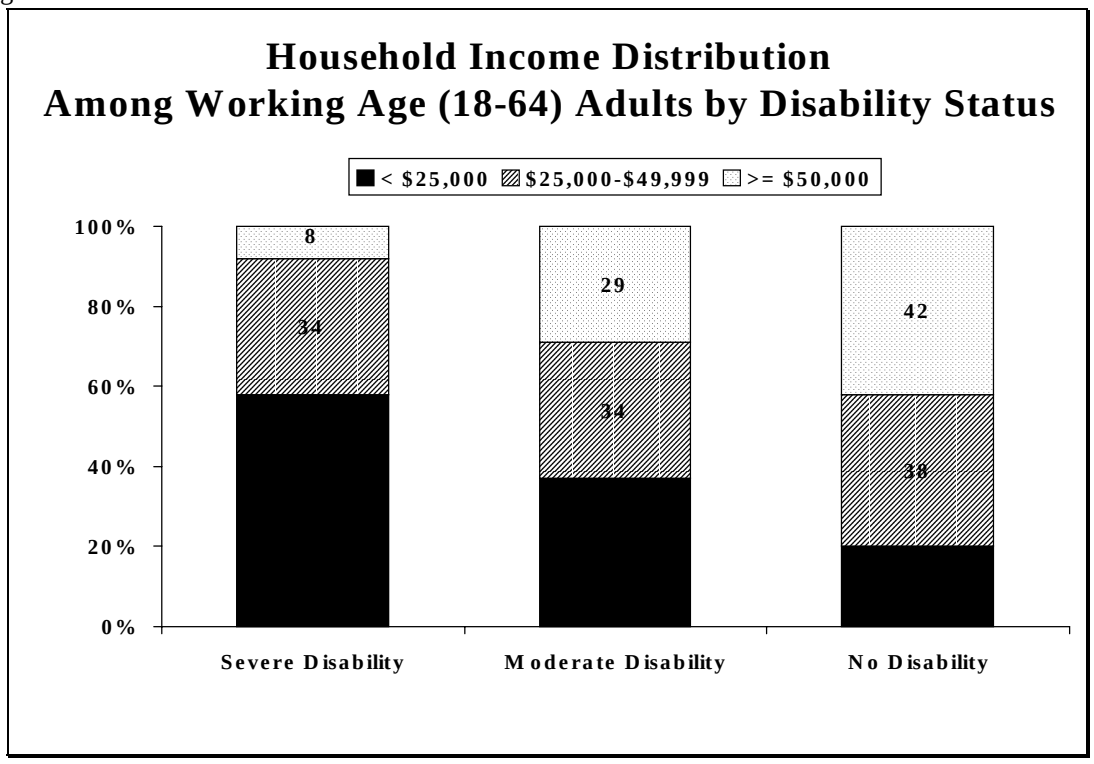
Figure 8 shows the household income distribution among working age (18-64) adults by disability status. The income difference by disability status is clearly related to their employment status seen in Figure 9.

58% of people with a severe disability had annual household incomes less than $25,000, compared with 37% of those with a moderate disability and 20% of those with no disability. Only 8% of those with a severe disability had annual household incomes more than $50,000, compared with 29% of those with a moderate disability and 42% of those with no disability.

People with lower economic status probably have more disabilities, to some extent, because they experience more injuries, less access to health care, and poorer diet and environment. On the other hand, people with disabilities probably have lower incomes because their disabling conditions restrict their ability to work.[4]

Three out of five people with severe disabilities had annual household incomes less than $25,000, compared with one in five people without disabilities.

Figure 8



Disability and Employment

Figure 9 shows the employment status of the working age (18-64) population by disability status. The 'Employed' category comprises 'employed for wages' and 'self-employed'. The 'Out of Work' category includes 'out of work for more than 1 year' and 'out of work for less than 1 year'. The 'Other' category includes 'home makers', 'students', and 'the retired'. The 'Unable to Work' category includes people who are unable to work due to their health problems.

Among working age adults with severe disabilities, only 31% were employed. This compares with 62% of those with moderate disabilities, and 81% of those without disabilities. Working age adults with severe disabilities also showed a higher rate of "out of work" (13%) than adults with a moderate disability (8%) or those without a disability (5%).

39% of working age adults with severe disabilities reported they were unable to work, compared with 10% of those with moderate disabilities.

People with disabilities were less likely to be employed and more likely to be unable to work than people without disabilities

Figure 9

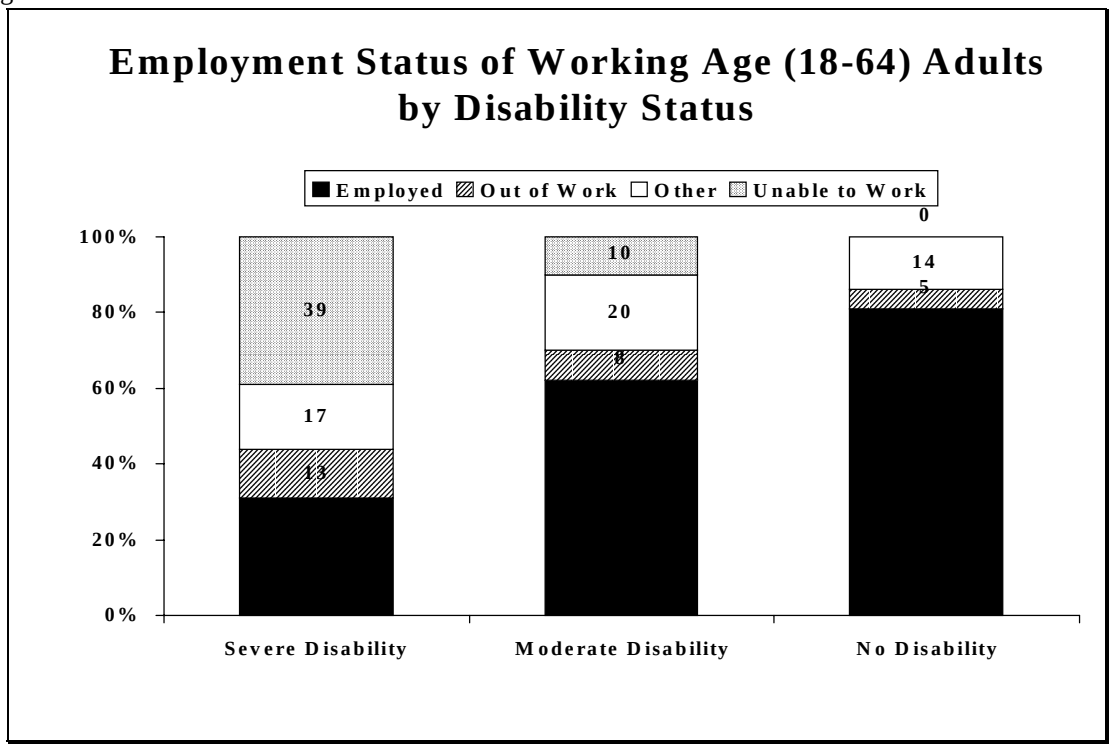


Table 2. Percent Distribution of RI Adults by Severity of Disability and Socio-Demographic Characteristics

Socio-Demographic Characteristics	(1) Severe Disability	(2) Moderate Disability	(1)+(2) Any Disability	No Disability
All Persons (Ages ≥ 18)	**5.5**	**15.5**	**21.0**	**79.0**
Age				
18-44	2.8	11.5	14.3	85.7
45-64	5.2	16.1	21.3	78.7
65-74	9.4	24.2	33.6	66.4
75 and Older	18.3	26.5	44.8	55.2
Gender				
Male	3.9	16.5	20.4	79.6
Female	6.9	14.6	21.6	78.4
Race/Ethnicity				
White	5.5	15.6	21.1	78.9
Black	5.7	17.0	22.7	77.3
Hispanic	5.2	10.0	15.2	84.8
Education				
Less than H. S.	12.6	25.1	37.7	62.3
H.S. Graduate	5.9	16.7	22.6	77.4
Some College	4.6	14.8	19.4	80.6
College Graduate	3.0	10.8	13.8	86.2
Income				
< $15,000	17.7	27.1	44.8	55.2
$15,000 - $24,999	8.6	24.5	33.1	66.9
$25,000 - $49,999	3.7	14.1	17.8	82.2
$50,000 - $74,999	1.5	12.2	13.7	86.3
>= $75,000	0.8	9.8	10.6	89.4

Source : 1998 Rhode Island Behavioral Risk Factor Surveillance System (n=3,602).

Part II :

Comparisons Among People with Severe, Moderate, and No disabilities

Health Status

General Health Status

Physical Health

Mental Health

Diabetes

General Health Status

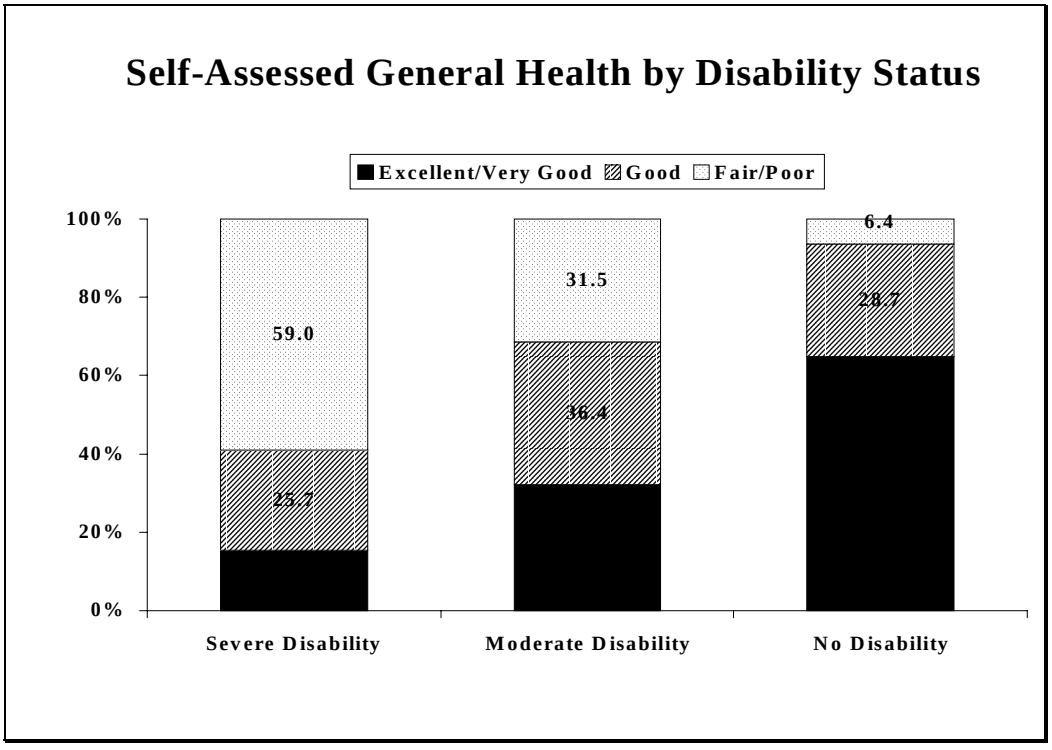
Q : "Would you say that in general your health is …?"

Studies have shown that self-assessed general health is a broad indicator of health and well being, which incorporates a variety of physical, emotional, and personal components of health.[5]

The measure of general health status came from respondents describing their health in general as 1) excellent, 2) very good, 3) good, 4) fair, or 5) poor. Figure 10 below combined the data into three groups; 1) excellent/very good, 2) good, and 3) fair/poor. Self-assessed general health was strongly associated with disability status. Only 15.3% of people with a severe disability reported that their health was excellent/very good, compared with 32.1% of people with a moderate disability and 64.9% of people with no disability. On the other hand, 59.0% of those with a severe disability said they had fair/poor health, compared with 31.5% of those with moderate disabilities and only 6.4% of those without disabilities.

People with a severe disability were nine times as likely to report fair/poor general health as people with no disability.

Figure 10



Physical Health

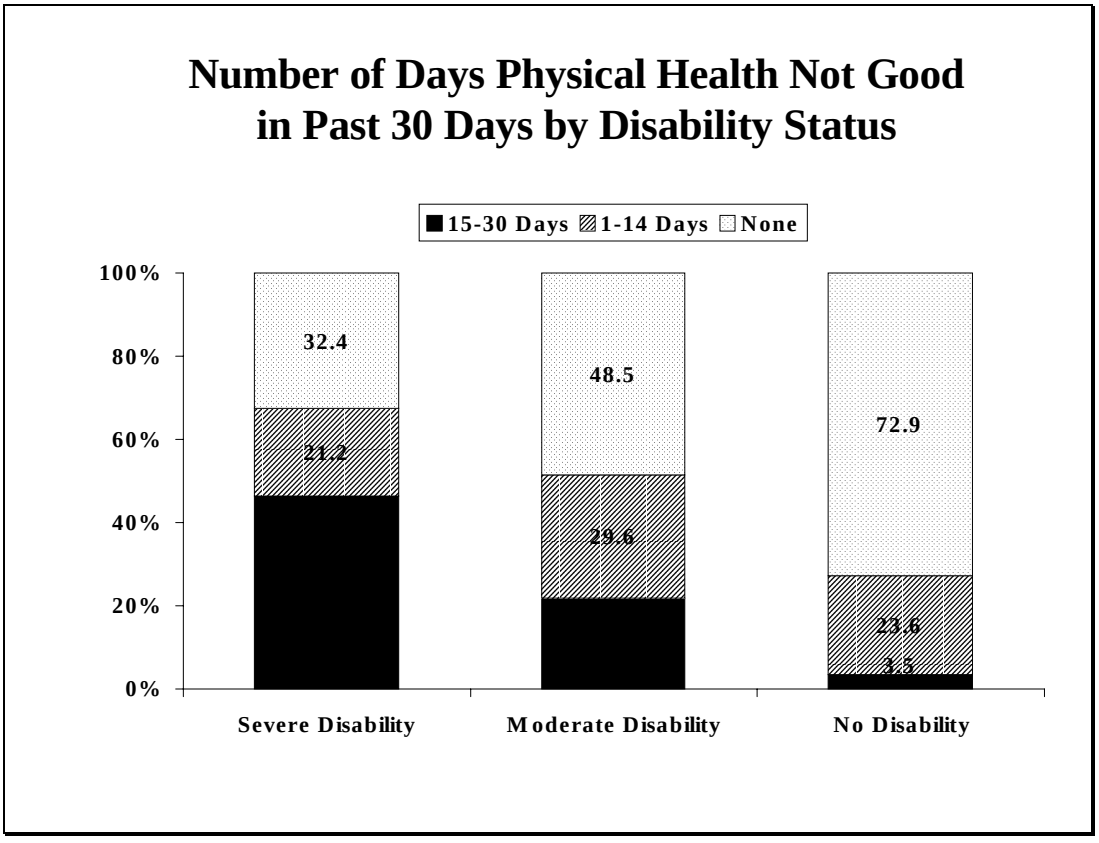
Q : "Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?"

Physical health is strongly associated with disability status. Nearly one half of people with severe disabilities (46.4%) reported that their physical health was not good more than 15 days in the past month, compared to 21.9 percent of those with moderate disabilities and 3.5 percent of those without disabilities.

On the other hand, one in three people with severe disabilities (32.4%), one in two people with moderate disabilities (48.5%), or seven in ten people with no disabilities (72.9%) reported they had no days of bad physical health in the past 30 days.

Nearly one half of people with a severe disability said that their physical health was not good more than 15 days in the past month.

Figure 11



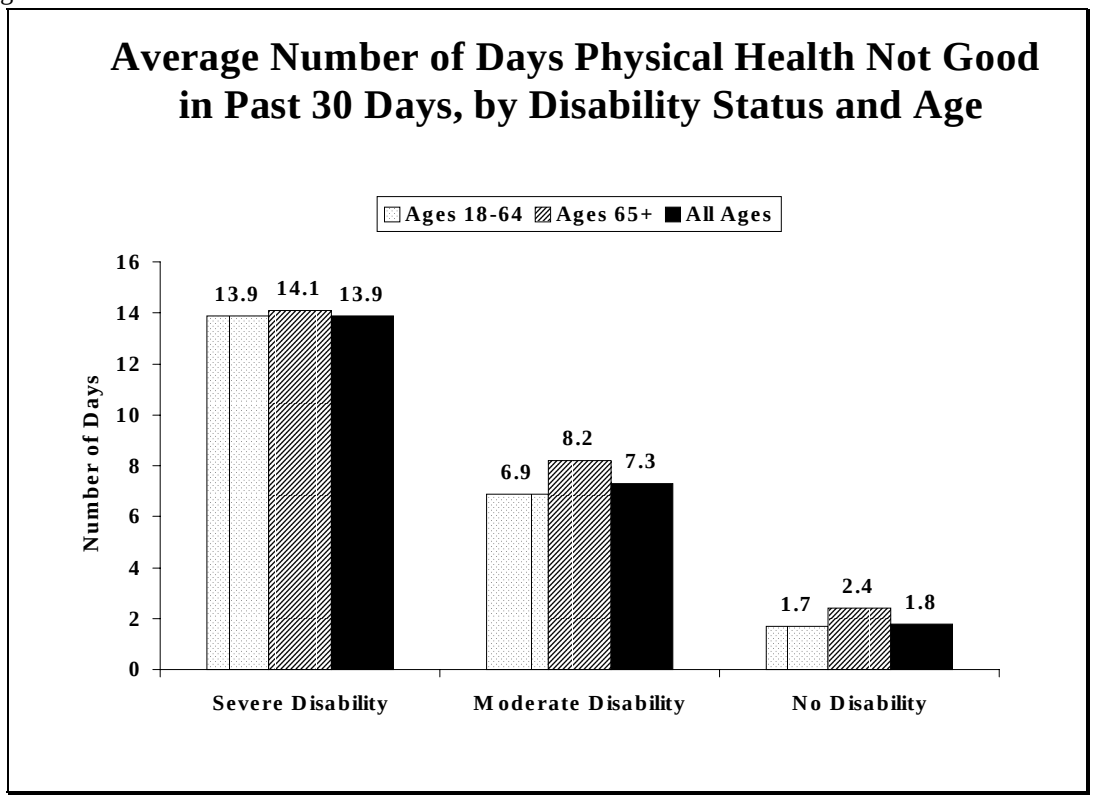
Average number of days physical health was not good

Overall, the average number of days physical health was not good in the past 30 days varied significantly across the disability status, regardless of age group; 13.9 days for people with severe disabilities, 7.3 days for people with moderate disabilities, and 1.8 days for those with no disabilities.

Within each disability category, the average number of days that physical health was not good remains fairly consistent across the age groups. Among people with severe disabilities, elderly persons reported almost the same number of days of poor physical health in the past month as their younger counterparts (13.9 days for the younger group vs. 14.1 days for the older group). Among those with moderate disability, elderly persons reported slightly more days of poor physical health than their younger counterparts (6.9 days for persons ages 18-64 vs. 8.2 days for persons aged 65 or over).

Among three disability status groups, the average number of days of poor physical health was the highest for those with a severe disability, followed by people with a moderate disability.

Figure 12



Mental Health

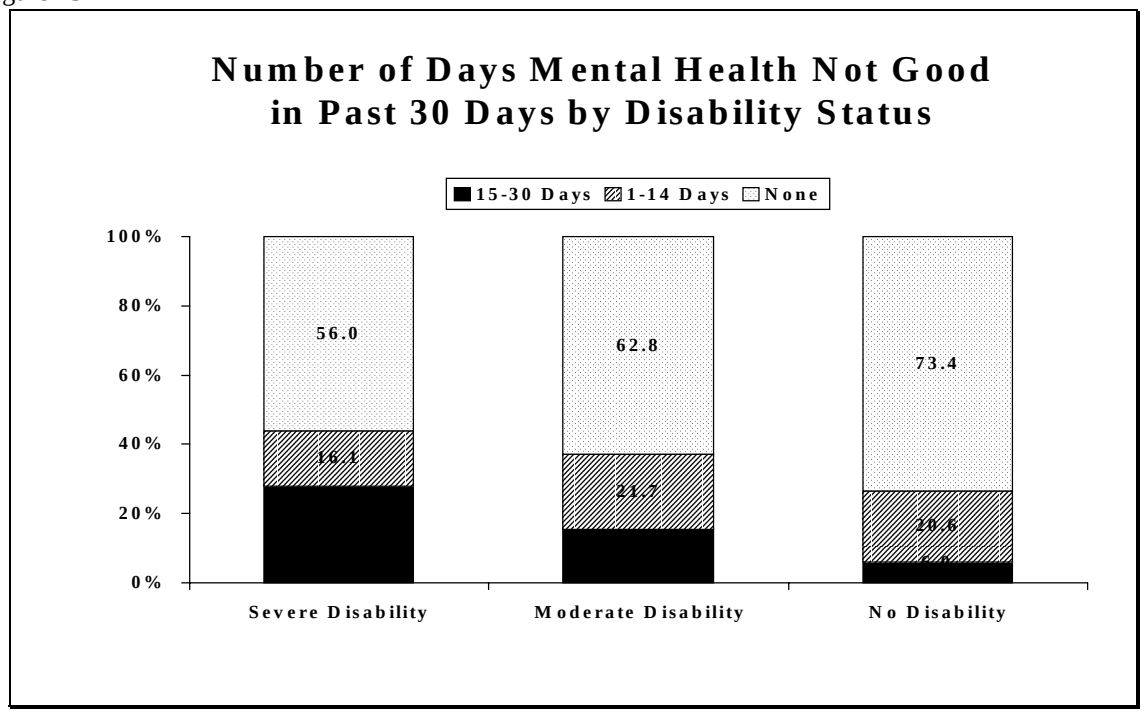
Q : "Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"

73.4% of people with no disabilities said that their mental health was good every day in the past month, compared to 62.8% of those with moderate disabilities and 56.0% of those with severe disabilities. On the other hand, 27.9% of those with severe disabilities reported that their mental health was not good more than 15 days in the past month, compared to 15.5% of those with moderate disabilities and 6.0% of those with no disabilities.

Comparing reported mental health (Figure 13) with reported physical health (see Figure 11) for people with severe disabilities shows that physical health problems occur much more frequently. Nearly one half of people with severe disabilities (46.4%) said that their physical health was not good more than 15 days in the past month, while fewer than three out of ten (27.9%) said their mental health was not good more than 15 days in the past month.

Nearly 3 in 10 people with a severe disability reported that their mental health was not good more than 15 days in the past month.

Figure 13



Average number of days mental health was not good

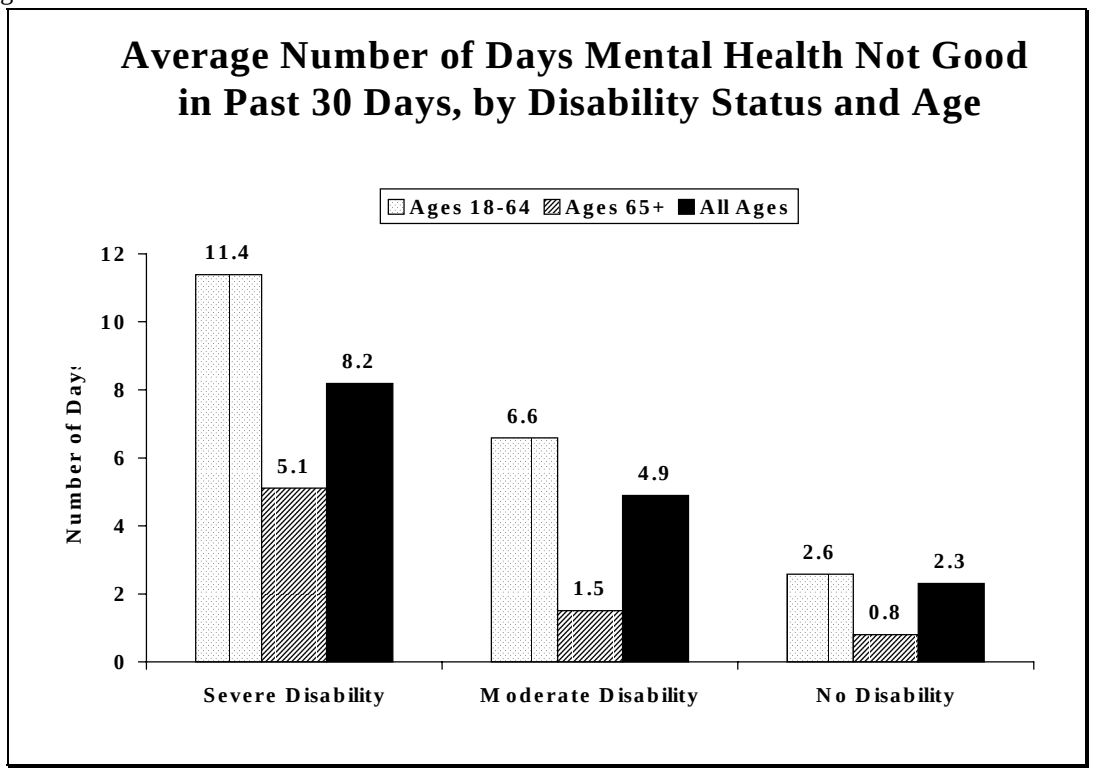
Overall, the average number of days mental health was not good during the past 30 days also varied significantly across the disability status; 8.2 days for people with severe disabilities, 4.9 days for people with moderate disabilities, and 2.3 days for those with no disabilities.

Within each disability status category, the average number of days mental health was not good varied by age group. Surprisingly, elderly people reported fewer days of poor mental health than their younger counterparts, in all three disability categories. This can be contrasted to the results seen in the physical health (see Figure 12): elderly people reported more days of poor physical health than their younger counterparts.

People ages 18-64 years with severe disabilities showed the highest average number of days (11.4 days), and people over 65 with no disabilities reported the fewest days (0.8 days) of poor mental health.

Within each disability status category, elderly people reported fewer days of poor mental health than their younger counterparts.

Figure 14



Diabetes

Q : "Have you ever been told by a doctor that you have diabetes?"

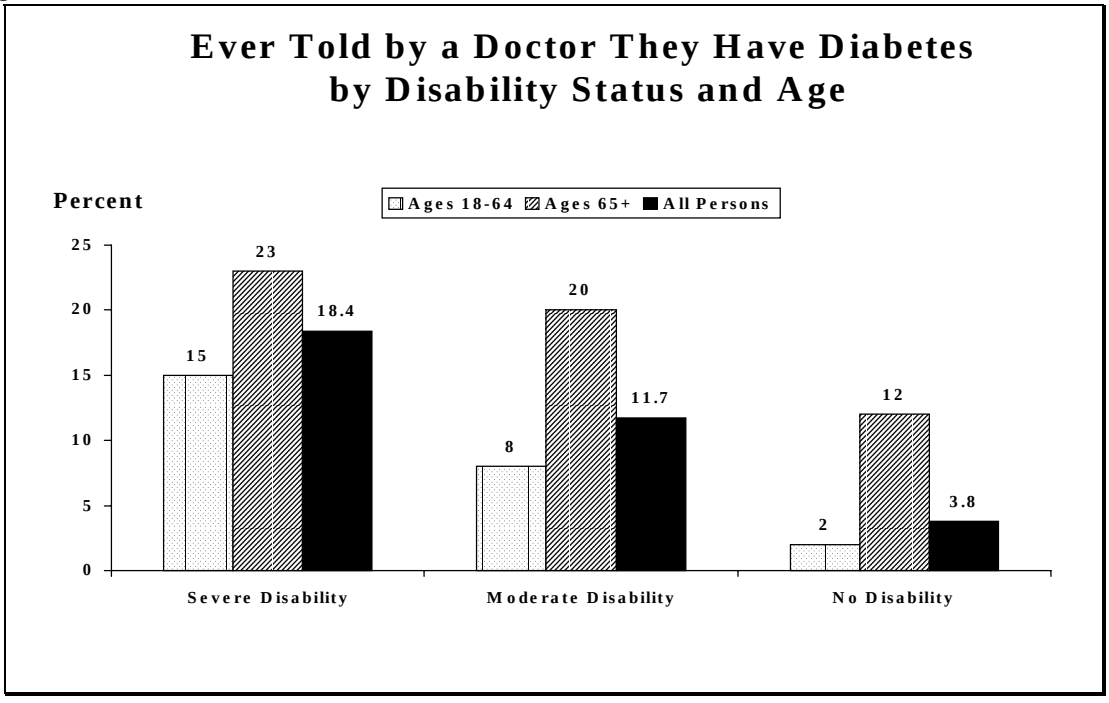
In 1995, diabetes was the seventh leading cause of death for all persons in the U.S. Individuals with diabetes face not only shortened life spans but also greater probability of multiple acute and chronic complications, including renal failure, blindness, and lower extremity amputations.[6]

Figure 15 shows the prevalence of diabetes by disability status and age. Overall, people with severe disabilities (18.4%) were nearly 5 times more likely than people with no disabilities (3.8%) to have diabetes. People with moderate disabilities (11.7%) were 3 times more likely to have diabetes than people without disabilities. The high prevalence of diabetes among people with disabilities is partly due to the older age distribution among those with disabilities than those without disabilities. It is also true that diabetes is a leading cause of disabilities.

As expected, elderly people (aged 65 or older) had higher rates of diabetes than their younger counterparts for all three disability groups.

Persons over 65 with disabilities had a higher rate of diabetes.

Figure 15



Comparisons Among People with Severe, Moderate, and No disabilities

Health Care Access and Utilization

Health Care Coverage

Type of Health Care Coverage

Medicare

Routine Medical Checkup

Could Not See a Doctor Because of the Cost

Doctor's Advice on Osteoporosis

Health Care Coverage

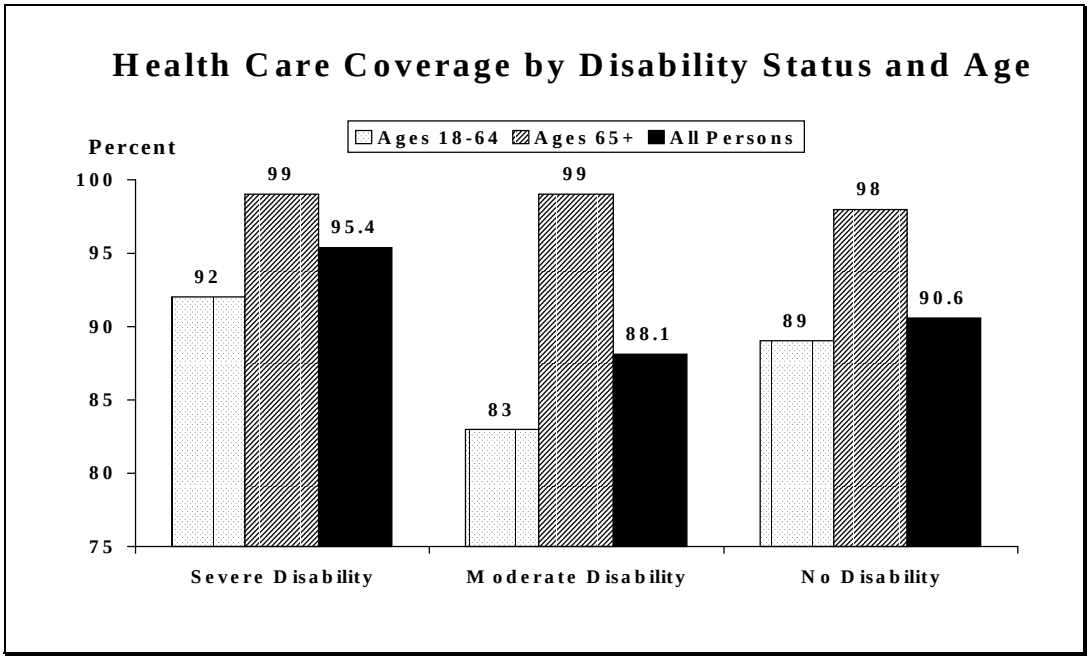
Q : "Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?"

Health insurance coverage is an important determinant of access to health care. Persons without health insurance coverage are less likely to have a usual source of health care, and are less likely to receive preventive health care services.[5]

Figure 16 shows that among the three groups by disability status, the overall health care coverage rate was the highest for people with a severe disability (95.4%) and the lowest for those with a moderate disability (88.1%). For those ages 65 and older, there were no differences in health care coverage rates across disability status; 99% of those with severe or with moderate disabilities had coverage, and 98% of those without disabilities had coverage. For those ages 18-64, only 83% of those with a moderate disability had health care coverage, compared with 92% of those a with severe disability and 89% of those without disability.

Persons under 65 with a moderate disability had the lowest health care coverage rate.

Figure 16



Type of Health Care Coverage

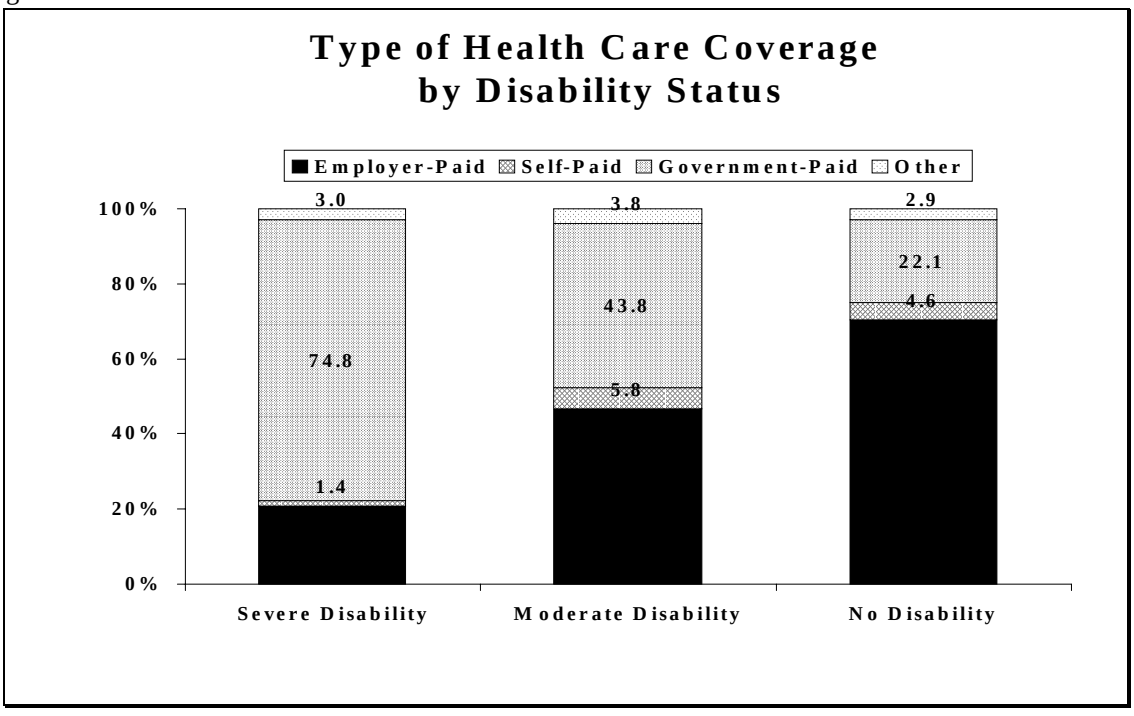
Q : "What type of health care coverage do you use to pay for most of your medical care?" (This question was asked only of those who had some kind of health coverage.)

An employer-paid plan is a plan paid for by one's own employer or someone else's employer. A self-paid plan is a plan that individuals buy on their own. A government-paid plan includes Medicare, Medicaid, Medical Assistance, and RIte Care. The 'other' category includes all other sources of coverage.

Type of health care coverage varied widely across disability status. The majority of people with a severe disability were covered by government-paid plans (74.8%), compared to only 22.1% of people without a disability. The main reason for this is that many of those with a severe disability are older people with low annual incomes. They are also more likely to have disability benefits. The majority of people without a disability had an employer-paid plan (70.5%), compared to 20.8% of those with a severe disability.

The majority of people with a severe disability had a government-paid plan, whereas the majority of people with no disability had an employer-paid plan.

Figure 17



Medicare

Q : "Medicare is a coverage plan for people 65 or over and for certain disabled people. Do you have Medicare?"

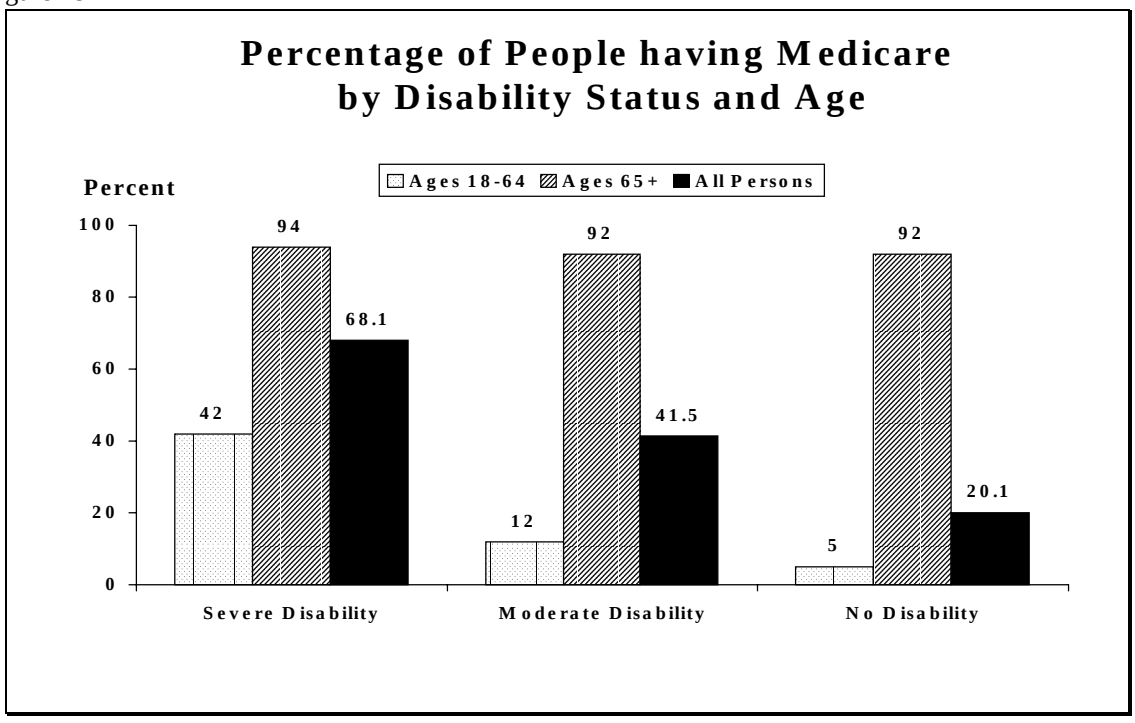
For all persons, 68.1% of people with severe disabilities said they had Medicare, compared to 41.5% of those with moderate disabilities and 20.1% of those without disabilities. The main reason for this is that those with severe disabilities tend to be elderly, and are more likely to have disability benefits.

For those 65 years and older, the majority of Rhode Islanders had Medicare regardless of the disability status. 94% of those with a severe disability and 92% of those with a moderate and those without a disability had Medicare.

For those 18-64 years of age, the rates of Medicare coverage varied substantially across the disability category, ranging from 42% of people with a severe disability, 12% of those with a moderate disability, to 5% of those without disabilities.

42 percent of persons 18-64 years of age with a severe disability had Medicare.

Figure 18



Routine Checkup

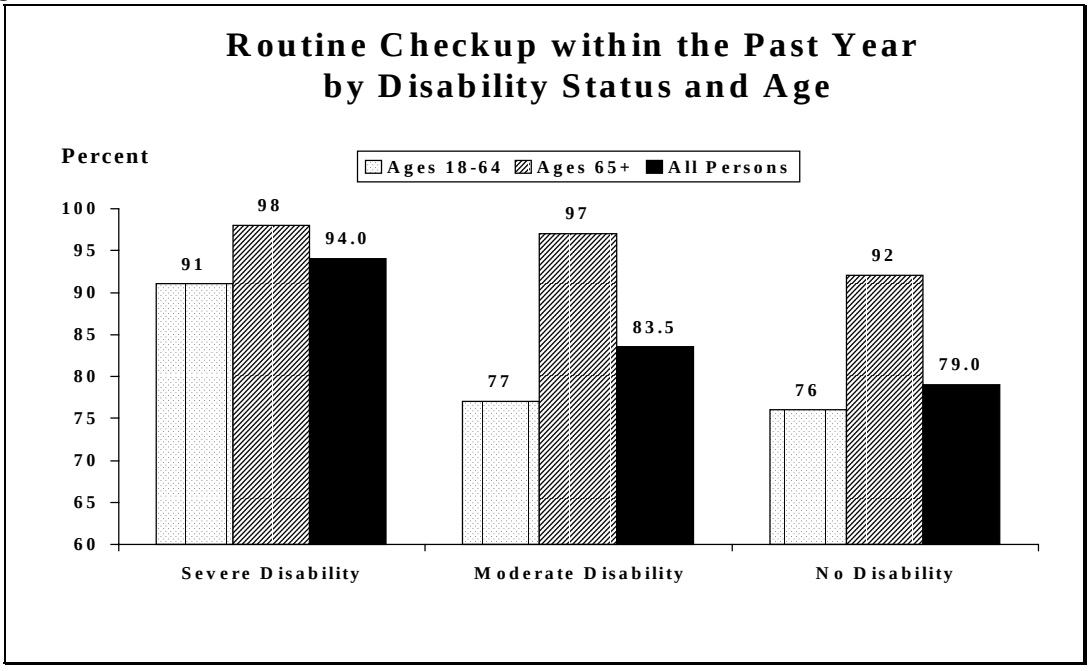
Q : "About how long has it been since you last visited a doctor for a routine checkup?"

Those who do not receive regular preventive health care may suffer adverse health consequences that require more intensive care in the future. Having a routine medical checkup within the past year is one measure of adequate access to care.[5]

The proportion of persons who have received routine checkups in the past year varied across disability status. 94.0% of people with a severe disability, 83.5% of people with a moderate disability, and 79.0% of those without a disability reported that they had received a routine checkup in the past year. For those ages 65 and older, people with severe (98%) and moderate disabilities (97%) had similar rates of routine checkups in the past year and their rates were higher than people without disabilities (92%). For those ages 18-64, 91% of those with severe disabilities had a routine checkup in the past year, compared to 77% of those with moderate disabilities and 76% of those with no disabilities.

Persons over 65 with disabilities were more likely to have routine checkups in the past year.

Figure 19



Could Not See a Doctor Because of the Cost

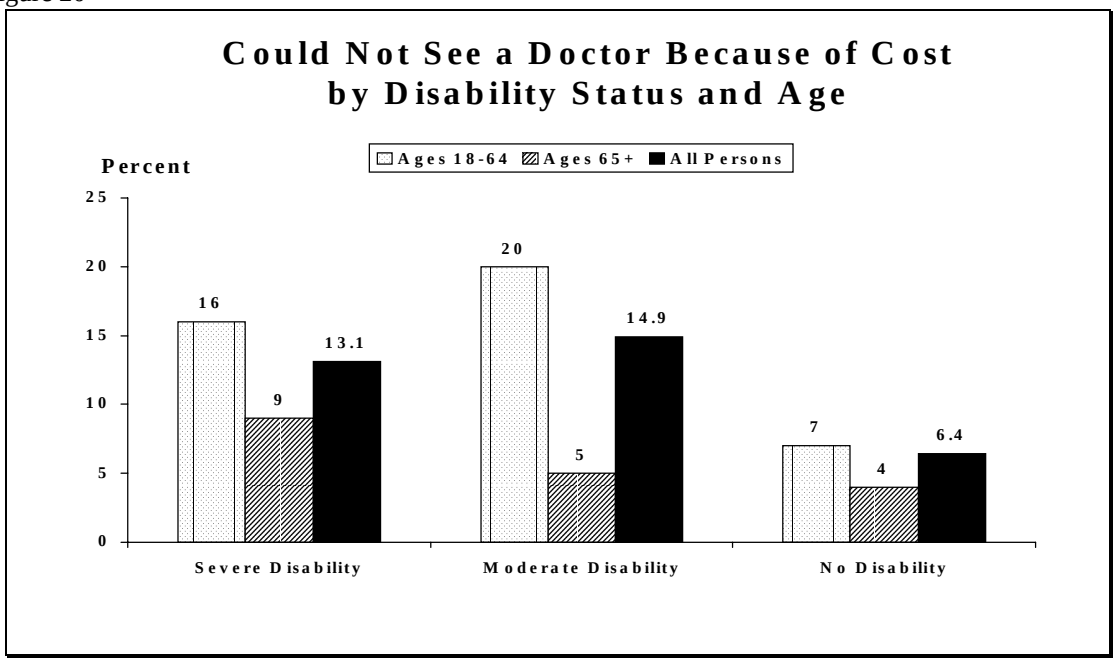
Q : "Was there a time during the past 12 months when you needed to see a doctor, but could not because of the cost?"

The proportion of people who could not see a doctor when needed because of the cost in the past year differed by disability status and age (Figure 20). Although 95.4% of people with a severe disability reported that they have health care coverage (see Figure 16), 13.1% of them answered that there was a time they could not see a doctor because of the cost. Among the three disability status groups, the overall percentage was the highest for those with moderate disability (14.9%) and the lowest for those without a disability (6.4%).

Within each disability category, those under 65 had a higher rate of inability to see a doctor because of the cost than the older group. Persons 18-64 years of age with moderate disabilities had the highest rate of inability to see a doctor because of the cost (20%). This is consistent with the results that, as seen in Figure 16 'Health Care Coverage by Disability Status and Age', persons in this category had the lowest rate of health care coverage.

People with disabilities, especially those under 65, had higher rates of unmet need for medical care because of the cost.

Figure 20



Doctor's Advice on Osteoporosis

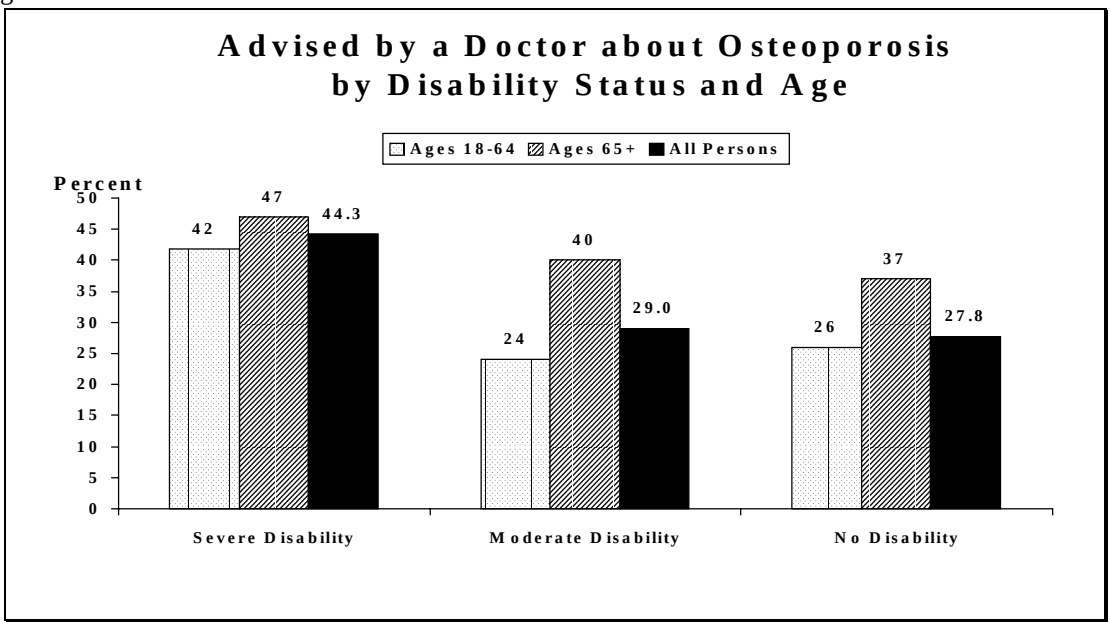
Q : "Has your doctor or health care provider discussed the risk of osteoporosis with you?"

Osteoporosis is characterized by the loss of bone mass, leading to fractures which contribute significantly to mortality and chronic disability. Osteoporosis is mainly associated with the loss of reproductive hormones and women are more likely to be affected by osteoporosis than men.[7]
A national study revealed that young women with disabilities were seven times more likely to have osteoporosis than women without disabilities in the same age group.[8]

Our data revealed that among Rhode Island adults ages 18 and over, 11.3 % of men and 44.3% of women have discussed osteoporosis with a doctor. Figure 21 shows that people with severe disabilities tended to have higher rates of doctor's advice than people with moderate or without disabilities (44.3% of people with a severe disability, 29.0% of those with a moderate disability, and 27.8% of those with no disability). Persons over 65 with severe disabilities had the highest percentage (47%) of receiving advice from a doctor about osteoporosis.

Elderly people with a severe disability had the highest rate of receiving a doctor's advice about osteoporosis.

Figure 21



Comparisons Among People with Severe, Moderate, and No disabilities

Health Risk Behavior

Overweight/Obesity

Weight Control

No Leisure-time Physical Activity

Cigarette Smoking

Fruit and Vegetable Consumption

Overweight/Obesity

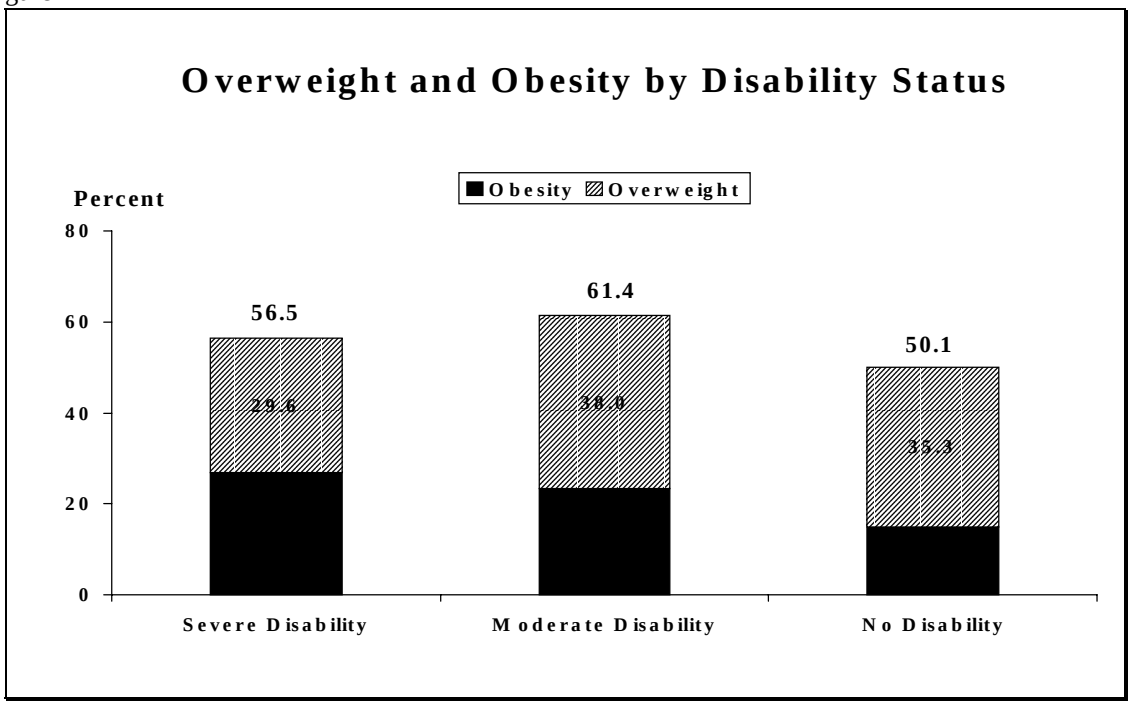
Being overweight is a known risk factor for many chronic conditions, such as, hypertension, heart disease, diabetes and some types of cancer. A healthy diet and regular physical activity are important to maintain a healthy weight.[5]

Overweight and obesity are measured by calculating Body Mass Index (BMI = weight in kilograms, divided by height in meters squared) based on the respondent's self-reported height and weight. Adults with BMI greater than or equal to 30.0 are considered obese, while adults with BMI between 25.0 and 29.9 are considered overweight.[9]

Figure 22 shows that more than half of Rhode Island adults, regardless of disability status, were either overweight or obese; 56.5% of people with severe disabilities, 61.4% of people with moderate disabilities, and 50.1% of people with no disabilities. Obesity was more common among people with disabilities: 26.9% of people with severe disabilities and 23.4% of people with moderate disabilities were obese, compared to 14.8% of people with no disabilities.

People with disabilities were more likely to be obese than people without a disability.

Figure 22



Weight Control

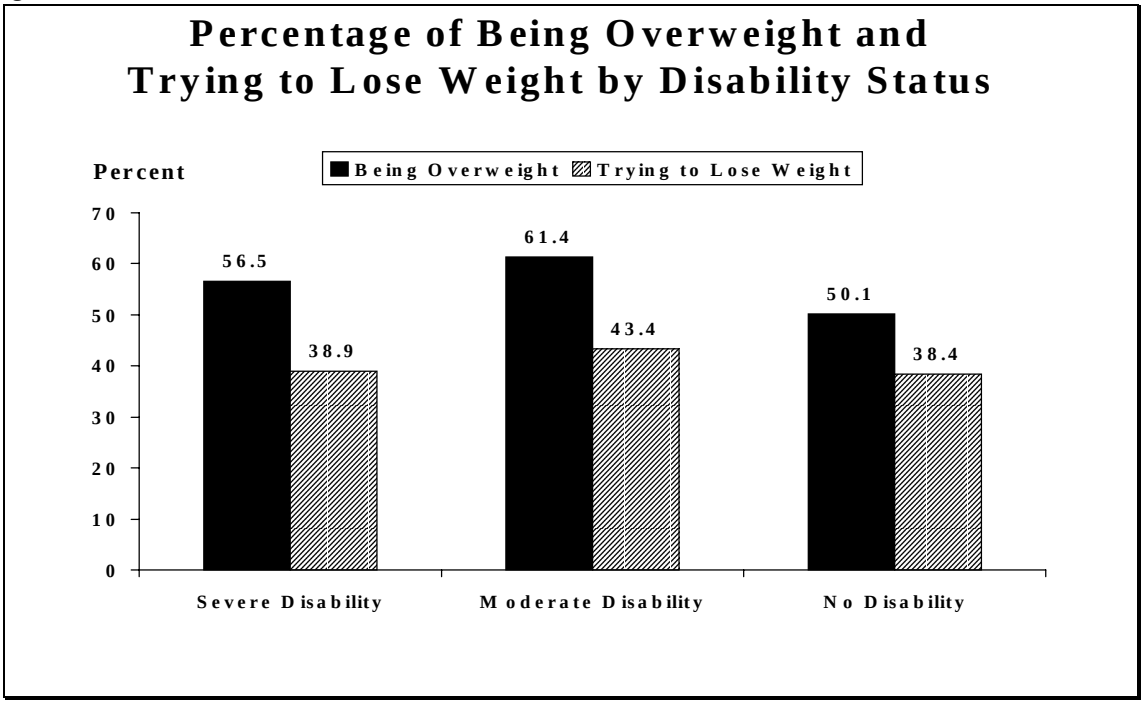
Q : "Are you now trying to lose weight?"

As discussed just above, 52.4% of Rhode Island adults were either obese or overweight, and the prevalence of overweight was higher for people with disabilities than people without disabilities (see Figure 22). However, only 38.8% of Rhode Island adults are currently trying to lose weight.

Figure 23 below shows that there were gaps between the prevalence of overweight and the percentage of people trying to lose weight in each category of disability. 56.5% of people with severe disabilities, 61.4% of people with moderate disabilities, and 50.1% of people without disabilities were overweight. However, only 38.9% of people with severe disabilities, 43.4% of people with moderate disabilities, and 38.4% of people with no disabilities were trying to lose weight. People with moderate disabilities had the highest percentage of being overweight and also had the highest percentage of trying to lose weight.

Thirty nine percent of Rhode Island adults were trying to lose weight. People with moderate disabilities had the highest percentage of trying to lose weight.

Figure 23



No Leisure-time Physical Activity

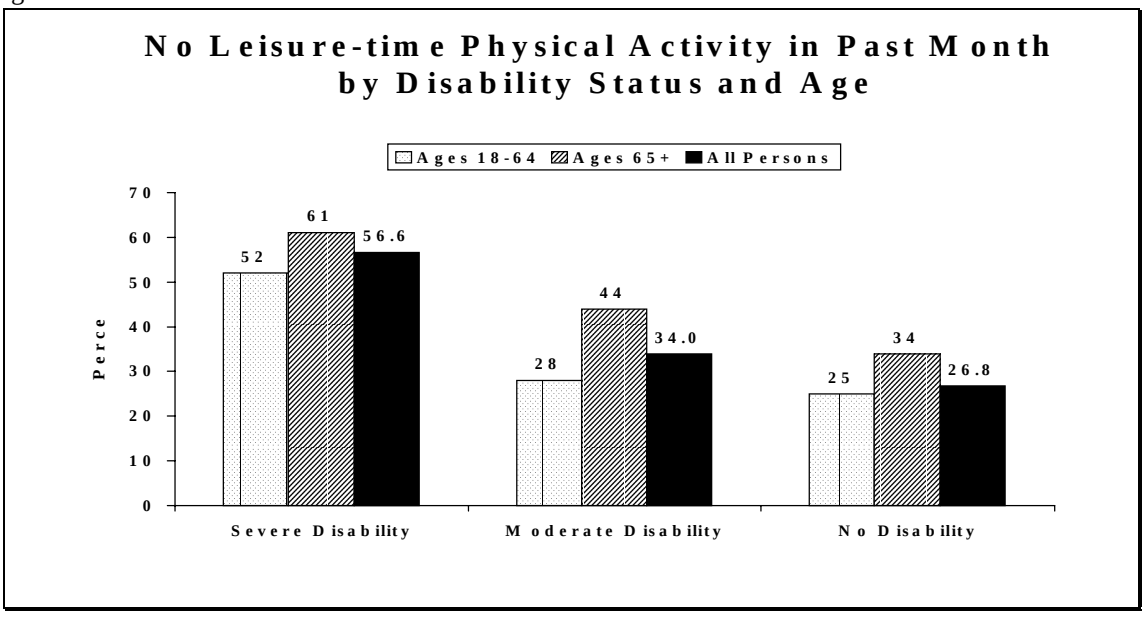
Q : "During the past month, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercises?"

Engaging in regular physical activity can reduce the risk of developing many chronic conditions, such as coronary heart disease, noninsulin-dependent diabetes, hypertension, and colon cancer, and thus lower the risk of premature death and disability.[5]

National Healthy People 2000 Objective 1.5b states a goal: "Reduce to no more than 20 percent the proportion of people with disabilities who engage in no leisure-time physical activity."[6]
Figure 24 below shows that more than half (56.6%) of people with severe disabilities reported they had no leisure-time physical activities in the past month. One in three people with moderate disabilities (34.0%) and one in four people with no disabilities (26.8%) reported they had no leisure-time physical activities in the past month. Within each disability status, the older group reported higher rates of no leisure-time physical activity than their younger counterparts.

More than half of people with severe disabilities and one in three people with moderate disabilities reported no leisure-time physical activities.

Figure 24



Cigarette Smoking

Cigarette smoking is the leading cause of preventable death and disease in the U.S. It leads to an increased risk for heart disease, lung cancer, emphysema, and other respiratory diseases.[5]

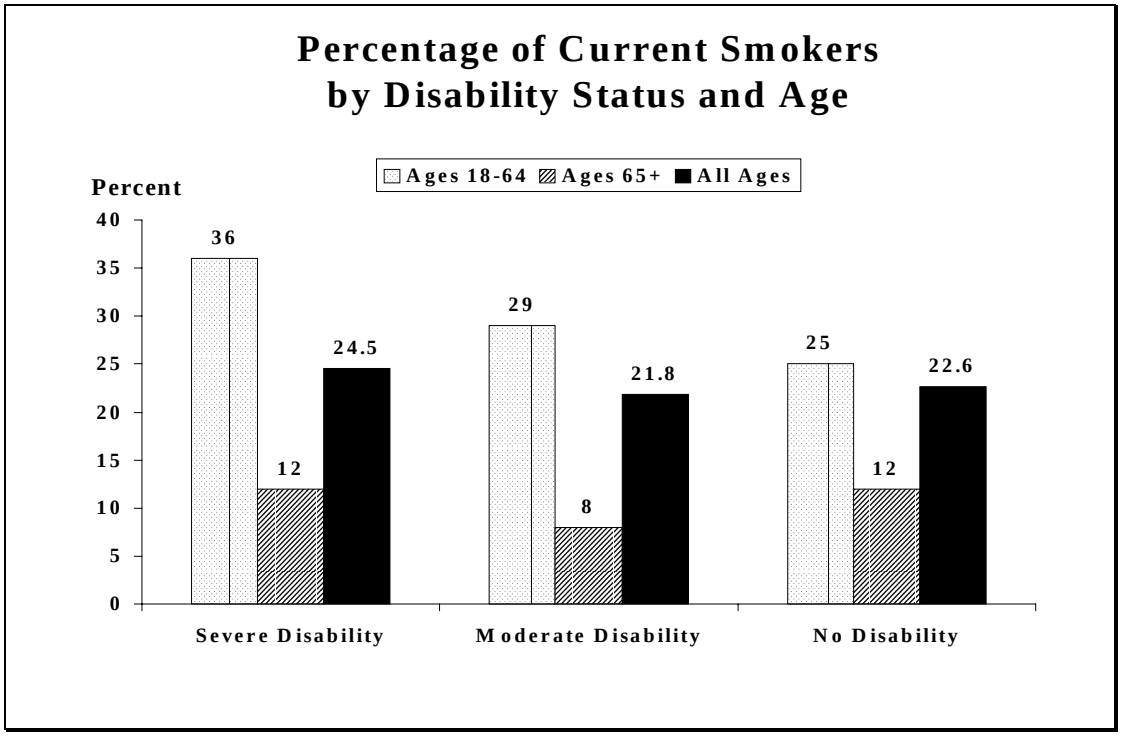
Figure 25 shows that the percentage of current smokers was much higher among those ages 18-64 than those over 65 years of ages, regardless of disability status.

Overall, people with severe disability showed a slightly higher rate of current smoking than the other two groups. 24.5% of people with a severe disability smoke currently, compared to 21.8% of people with moderate disabilities and 22.6% of people without a disability.

For younger age group (ages 18-64), people with severe disabilities had the highest rate of current smoking (36%) followed by people with moderate disabilities (29%) and then people with no disabilities (25%).

Persons 18-64 years of age with a severe disability had the highest rate of current smoking.

Figure 25



Fruit and Vegetable Consumption

Nutrition is essential for sustenance, health, and well-being. Dietary factors are associated with increased risk of many leading causes of death: heart disease, some types of cancer, stroke, and diabetes.[6]

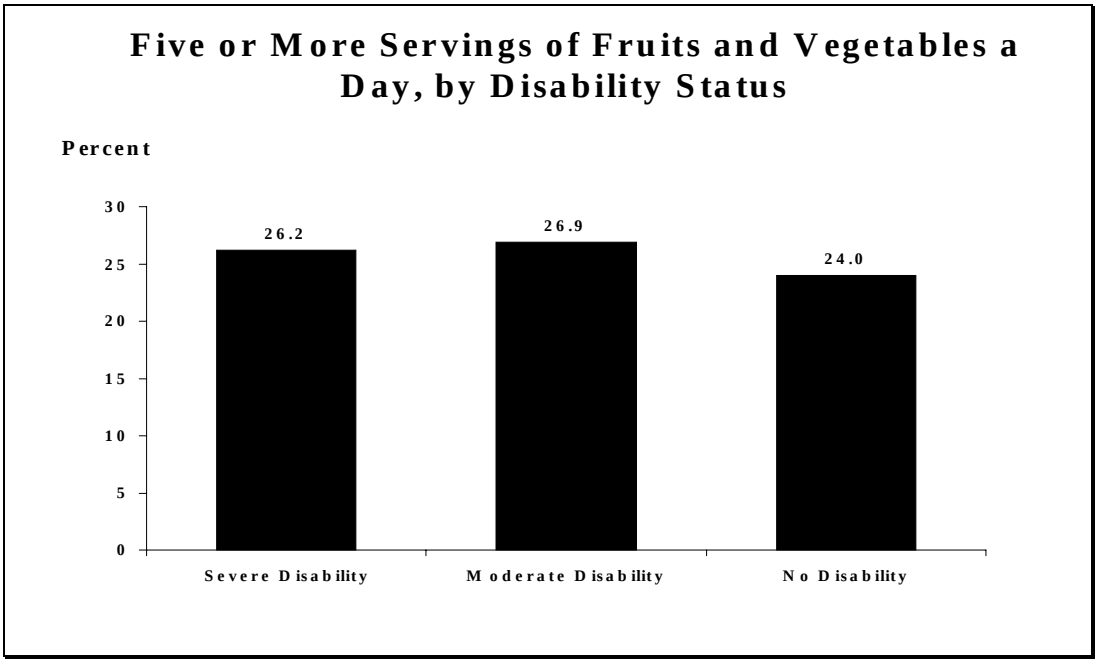
Healthy People 2000 Objective 2.6 states a goal: "Increase complex carbohydrate and fiber-containing foods in the diets of adults to 5 or more daily servings for vegetables (including legumes) and fruits, …." [6]

Overall, 24.6% of Rhode Island adults consumed five or more daily servings of vegetables and fruits. Our results also revealed that older persons (65+) were more likely than younger persons (18-64), and women were more likely than men, to consume fruits and vegetables.

Figure 26 shows that people with severe and moderate disabilities were slightly more likely than people without disabilities to consume 5 or more servings of fruits and vegetables daily. The probable reason for this is that people with disabilities tend to have a higher proportion of women and the elderly, who tend to consume more fruits and vegetables.

People with disabilities were slightly more likely than people without disabilities to consume 5 or more servings of fruits and vegetables daily.

Figure 26



Comparisons Among People with Severe, Moderate, and No disabilities

Women's Preventive Health

Pap Smear

Mammogram

Pap Smear

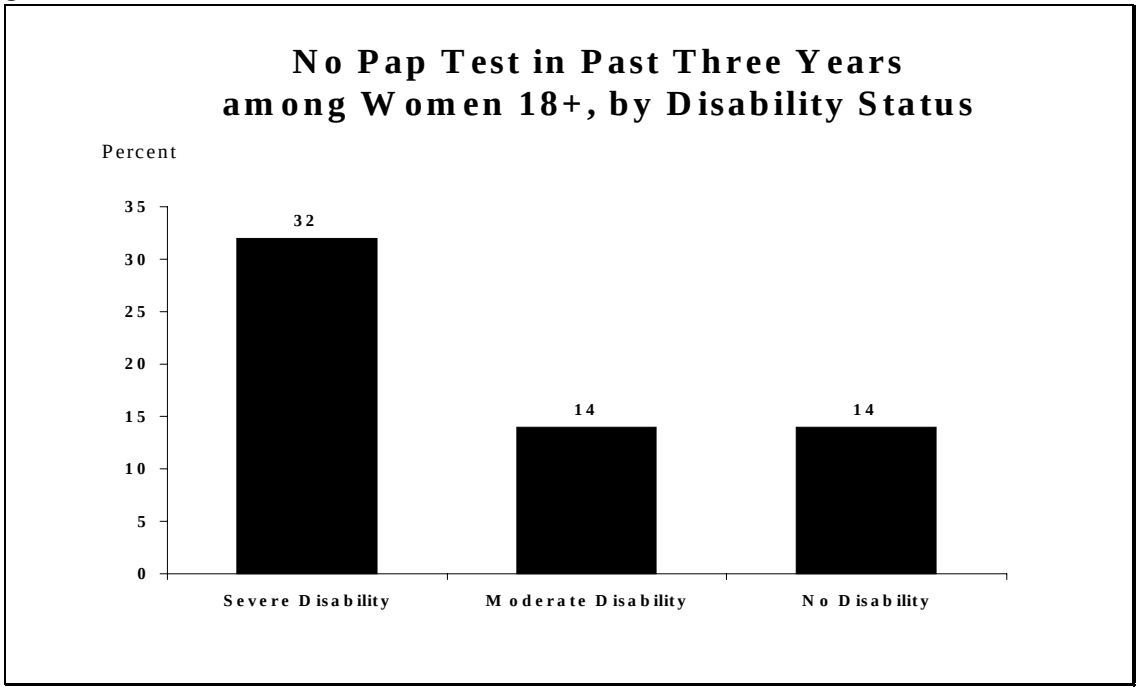
Cancer of the uterine cervix is one of the most commonly occurring cancers for women. Use of the Pap smear to screen for cervical cancer greatly reduces the risk of death from invasive cervical cancer.[6]

Healthy People 2000 Objective 16.12 states a goal: "Increase to at least 85 percent the proportion of women aged 18 and older with a uterine cervix who received a Pap test within the preceding 1 to 3 years." [6]

Figure 27 shows the proportion of women aged 18 and older with a uterine cervix who had not received a Pap test in the past 3 years. (Women who have had a hysterectomy were excluded). Women with severe disabilities (32%) were more than two times as likely as women with moderate (14%) or no disabilities (14%) not to have received a Pap test in the past 3 years. This contrasts with the finding that people with severe disabilities were more likely to have routine medical checkups in the past year (see Figure 19). Each category of women in Rhode Island, except women with severe disabilities, has met the Healthy People 2000 objective on Pap smear.

Women with a severe disability were twice as likely not to have received a Pap test in the past 3 years than the rest of women.

Figure 27



Mammogram

Regular mammography screening has been shown to be effective in reducing breast cancer mortality. For women age 50 years and over, the National Cancer Institute recommends screening with mammography every 1 to 2 years.[5]

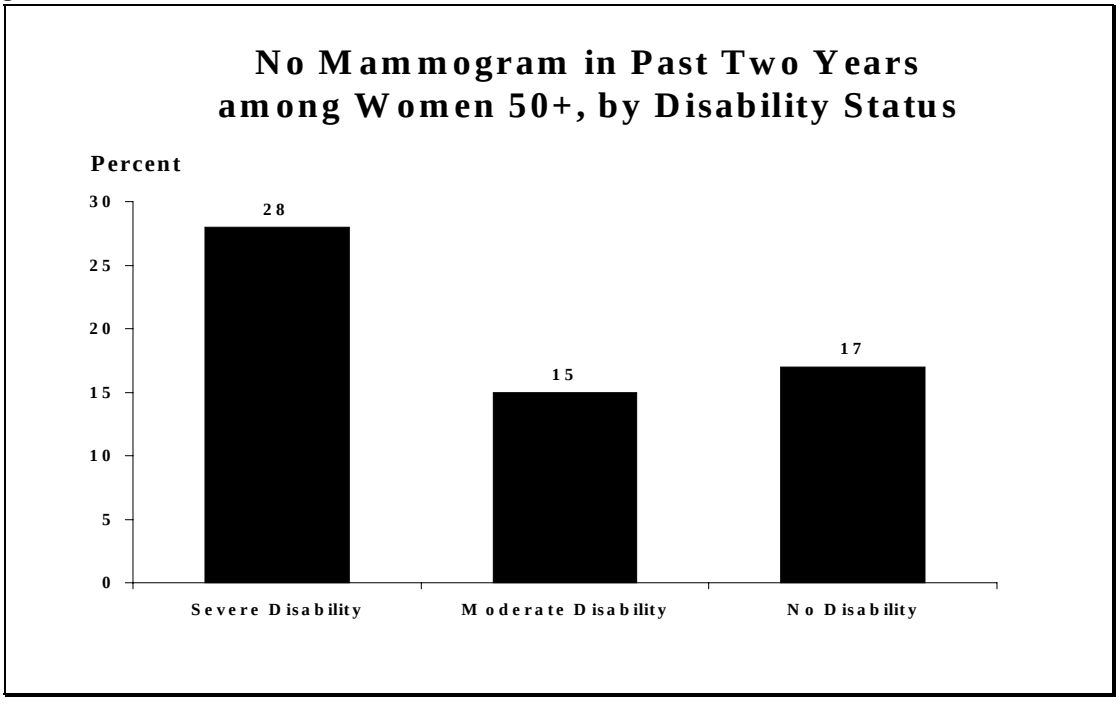
Figure 28 shows the percentage of women 50 years and over who had not received a mammogram in the past 2 years by disability status.

The percentage of women who had not received a mammogram in the past 2 years was significantly higher among women with severe disabilities (28%) than women with moderate disabilities (15%) or with no disabilities (17%).

Data from a national survey also show that women with a severe disability were less likely to report receiving Pap smears and mammograms, compared with women without a disability, regardless of age, health maintenance organization (HMO) enrollment status, or long-term care arrangements.[10]

Women 50 years and older with a severe disability were substantially less likely to have received a mammogram in the past two years than other women of the same age.

Figure 28



Comparisons Among People with Severe, Moderate, and No disabilities

Quality of Life

Life Satisfaction

Social Support

Pain

Depression

Anxiety

Vitality

Life Satisfaction

Q : "In general, how satisfied are you with your life?"

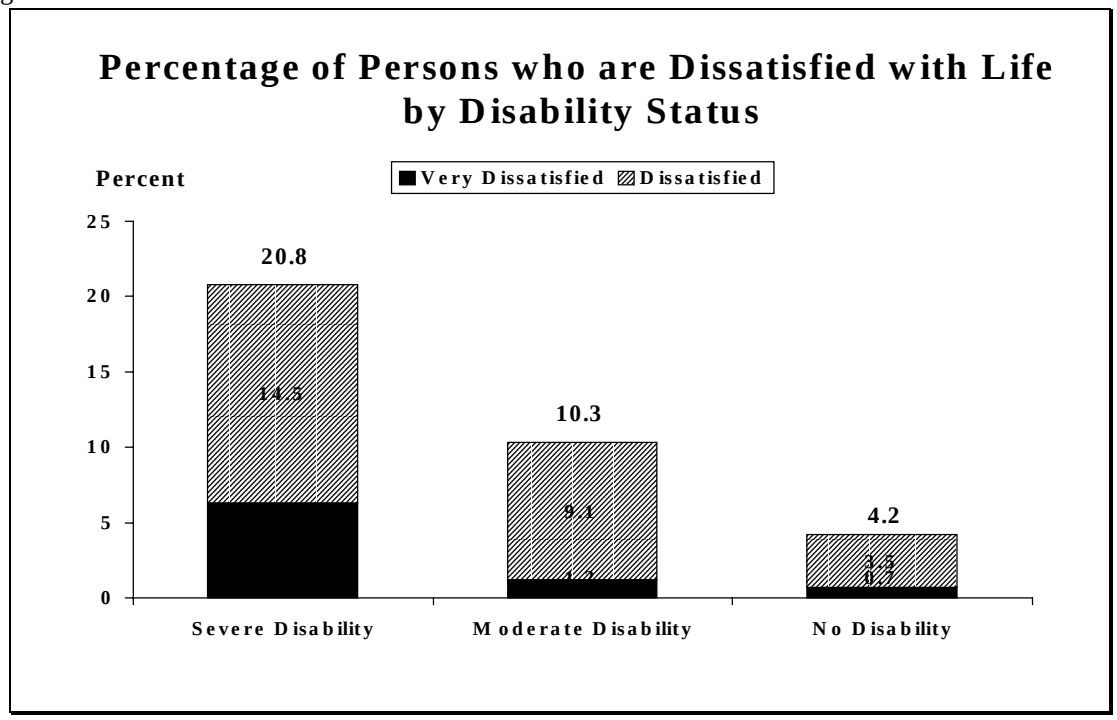
The proportion of persons who are satisfied with life varied across disability status. Table 3 below shows that nearly one half of people with no disabilities (46.6%) reported they were very satisfied with their lives, compared with one in three people with moderate disabilities (35.1%) and one in five people with severe disabilities (21.6%).

On the other hand, Figure 29 shows that 20.8% of people with severe disabilities said they were either very dissatisfied or dissatisfied with their lives, two times the percentage for those with moderate disabilities (10.3%) and five times the percentage for those with no disabilities (4.2%).

Table 3. Life Satisfaction by Disability Status

	Severe Disability	Moderate Disability	No Disability
Very Satisfied	**21.6**	**35.1**	**46.6**
Satisfied	**57.6**	**54.7**	**49.2**
Dissatisfied	**14.5**	**9.1**	**3.5**
Very Dissatisfied	**6.3**	**1.2**	**0.7**

Figure 29



Social Support

Q : "How often do you get the social and emotional support you need?"

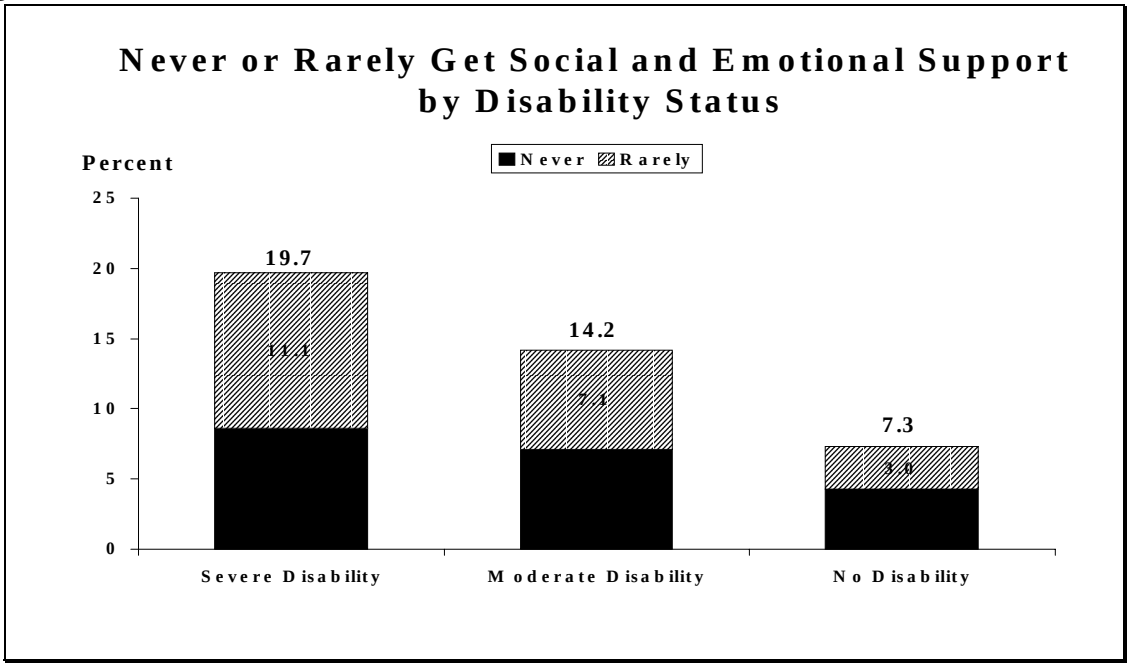
Studies have demonstrated that the absence of social support has been associated with an increase in heart disease, complications in pregnancy, depression, suicide, and other unhealthy outcomes.[11]

Table 4 below shows that 79.3% of people without disabilities, 69.8% of people with moderate disabilities, and 61.2% of people with severe disabilities reported that they always or usually get the social and emotional support they need. However, a fairly large proportion of RI adults reported that they rarely or never get social and emotional support, and it varied by disability status; 19.7% of people with severe disabilities, 14.2% of people with moderate disabilities, and 7.3% of people without disabilities.

Table 4. Social and Emotional Support by Disability Status

	Severe Disability	Moderate Disability	No Disability
Always/Usually	**61.2**	**69.8**	**79.3**
Sometimes	**19.1**	**16.0**	**13.4**
Rarely	**11.1**	**7.1**	**3.0**
Never	**8.6**	**7.1**	**4.3**

Figure 30



Pain

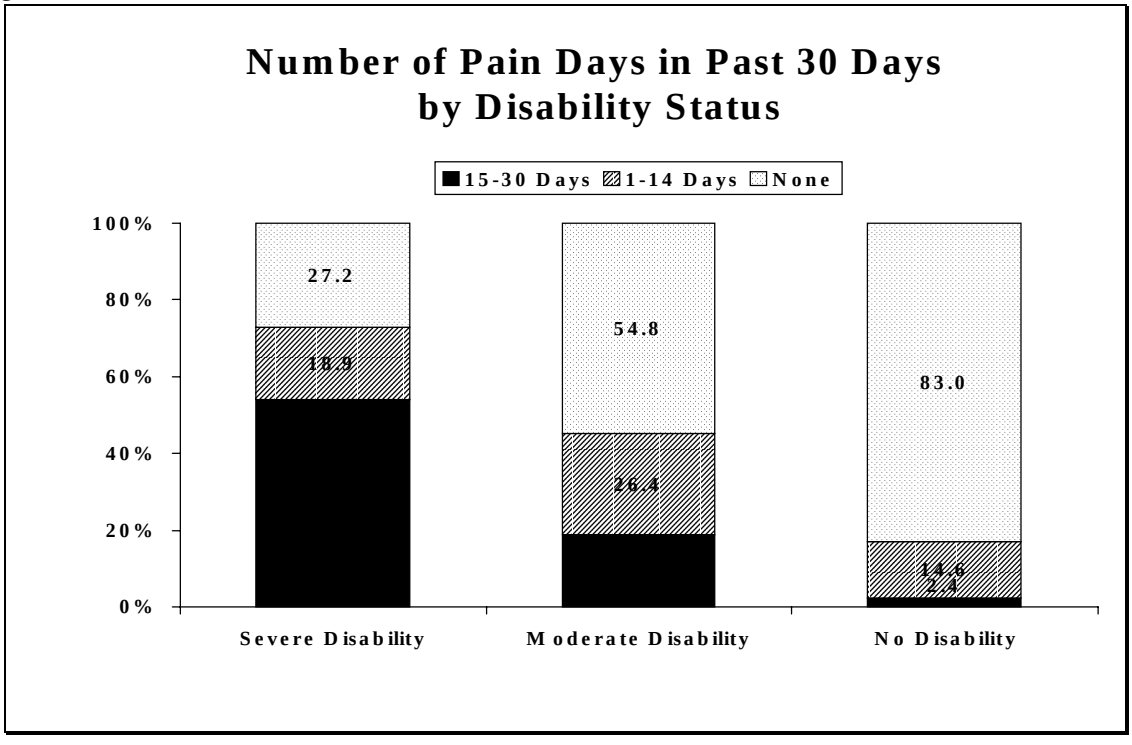
Q : "During the past 30 days, for about how many days did PAIN make it hard for you to do your usual activities, such as self-care, work, or recreation?"

Pain is among the most serious problems for people with disabilities, especially for those with severe disabilities (Figures 31 and 32). More than one half of people with severe disabilities (54.0%) reported that pain made it hard for them to do their usual activities more than 15 days (frequent pain) in the past month. This percentage compared to 18.8% of those with moderate disabilities, and 2.4% of those without disabilities. Persons with severe disabilities were more than 20 times as likely as persons with no disabilities to report frequent pain (15+ days in the past 30 days) (Figure 31).

On the other hand, 83.0% of people without disabilities reported that they have not had any days of pain in the past month, compared to 54.8% of those with moderate disabilities, and only 27.2% of those with severe disabilities.

Persons with severe disabilities were more than 20 times as likely as persons with no disabilities to report frequent pain.

Figure 31



Average Number of Days with Pain

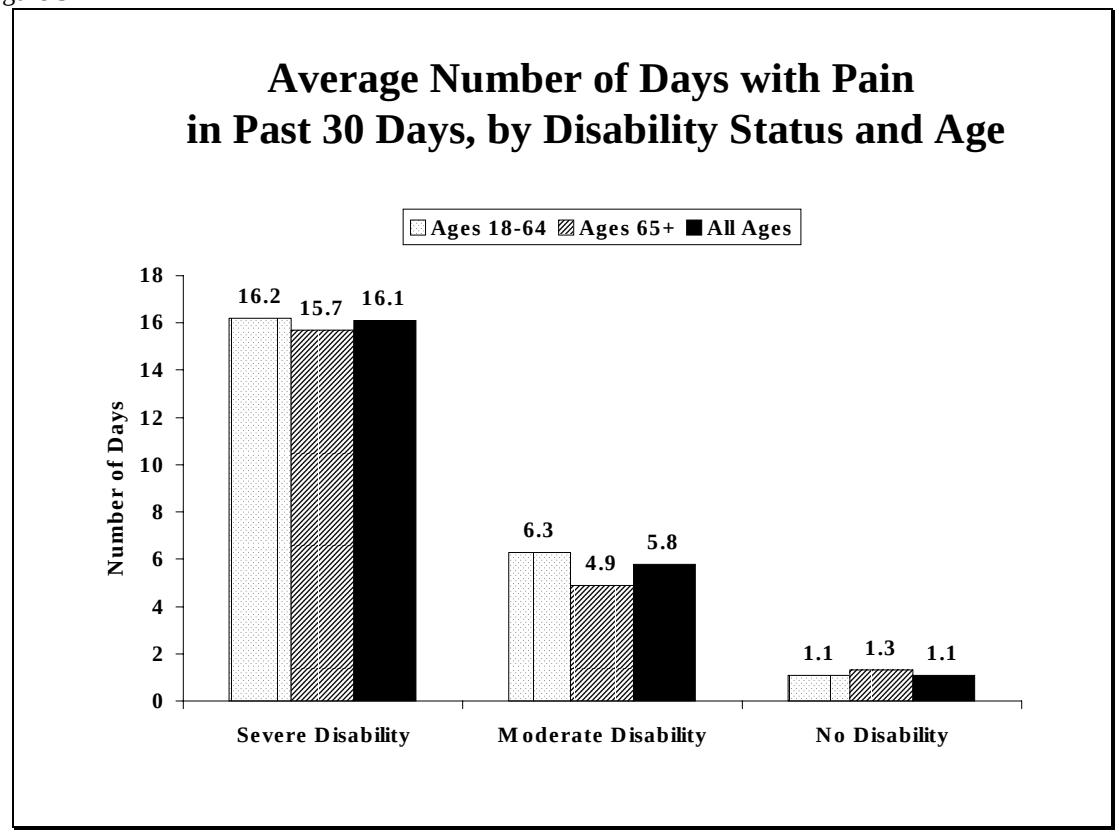
Overall, the average number of days during the past 30 days with pain which hindered person's usual activities varied significantly across the disability status; 16.1 days among those with severe disabilities, 5.8 days among those with moderate disabilities, and 1.1 days among those without disabilities (Figure 32).

Within each disability category, the average number of days with pain in the past month was quite similar for the two age groups.

For those with severe disabilities and those without disabilities, the differences between those over 65 and those under 65 in the average number of days with pain were negligible. For those with moderate disabilities, elderly people reported a slightly lower average number of days.

The average number of days with pain during the past month was much higher for those with severe disabilities than the rest of the people.

Figure 32



Depression

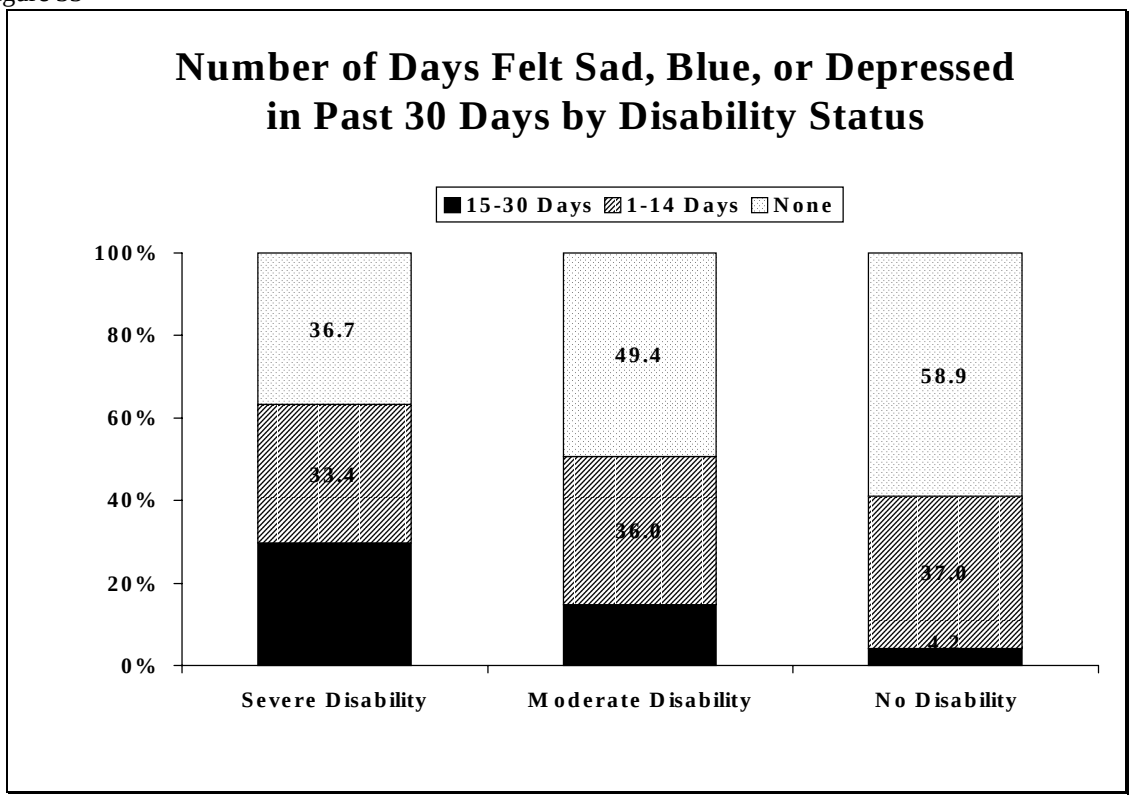
Q : "During the past 30 days, for about how many days have you felt SAD, BLUE, or DEPRESSED?"

Mental health problems or emotional "blues" is another major issue for people with disabilities. Generally, people with disabilities were more likely than people without disabilities to have emotional "blues" (Figures 33 and 34). 29.8% of people with severe disabilities reported they have felt sad, blue, or depressed for more than 15 days (frequent depression) in the past month, compared to 14.6% of people with moderate disabilities and 4.2% of people with no disabilities.

On the other hand, 58.9% of people without disabilities reported no days in the past month in which they felt sad, blue, or depressed, compared to 49.4% of people with moderate disabilities and only 36.7% of people with severe disabilities.

People with severe disabilities were 7 times more likely than people with no disabilities to report frequent depression.

Figure 33



Average Number of Days with Depression

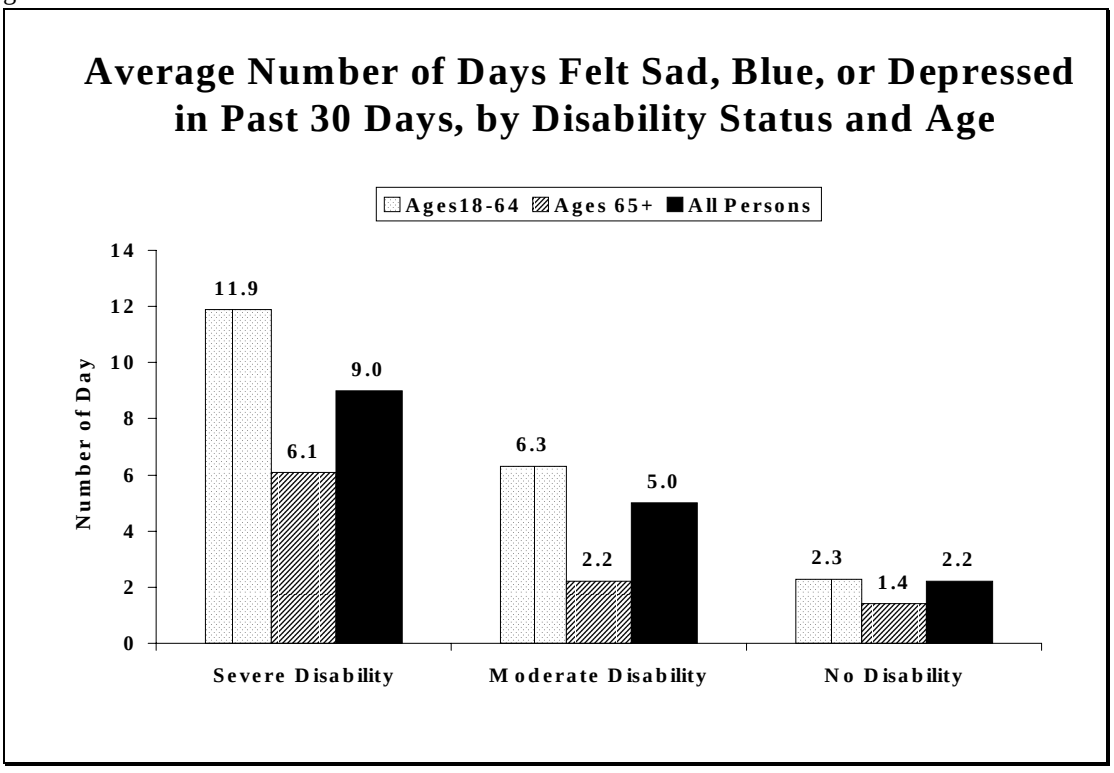
Overall, the average number of days with depression in the past month varied significantly across disability status; 9.0 days for people with severe disabilities, 5.0 days for people with moderate disabilities, and 2.2 days for people with no disabilities.

Surprisingly, those over 65 had a much lower average number of days with depression than their younger counterparts in the past month in all three-disability groups.

It is interesting to note that even though elderly people with severe disabilities have many days with pain (see Figure 32, they averaged 16 pain days in the past month), they felt depressed a surprisingly lower average number of days (average 6 days in the past month). A possible reason for this is that elderly people with disabilities are more used to their disabilities than younger people. They may also consider their disabilities as the usual situation for their age group.

Persons 18-64 years of age with severe disabilities reported the highest average number of days in which they felt sad, blue, or depressed.

Figure 34



Anxiety

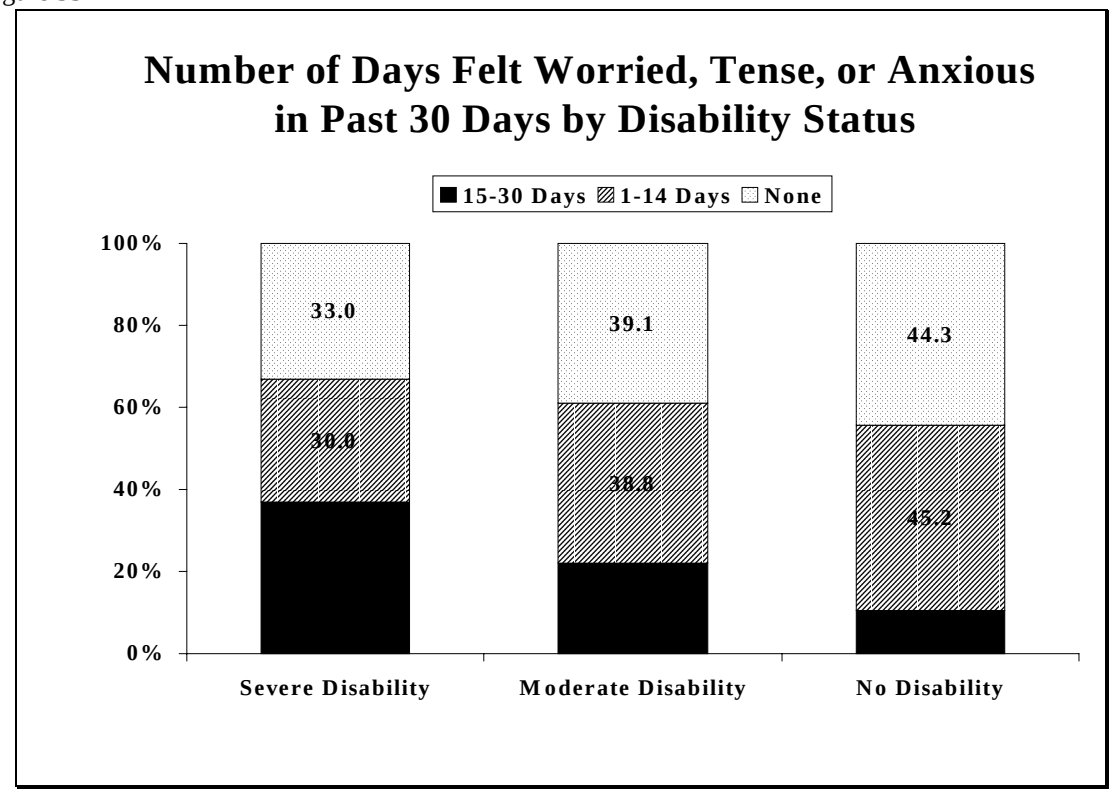
Q : "During the past 30 days, for about how many days have you felt WORRIED, TENSE, or ANXIOUS?"

People with disabilities were more likely than people without disabilities to have felt worried, tense, or anxious (Figures 35 and 36). 37.0% of people with severe disabilities, 22.1% of people with moderate disabilities, and 10.5% of people with no disabilities reported they have felt worried, tense, or anxious more than 15 days (frequent anxiety) in the past month.

Similarly, people with disabilities were less likely than people without disabilities to have "anxiety free" days. Overall, less than half of Rhode Island adults (42.8%) reported that they have not felt worried, tense, or anxious in any of the past 30 days. 33.0% of people with severe disabilities, 39.1% of those with moderate disabilities, and 44.3% of those without disabilities reported that they had no days with anxiety.

People with severe disabilities were 3 and ½ times more likely than people without disabilities to report frequent anxiety.

Figure 35



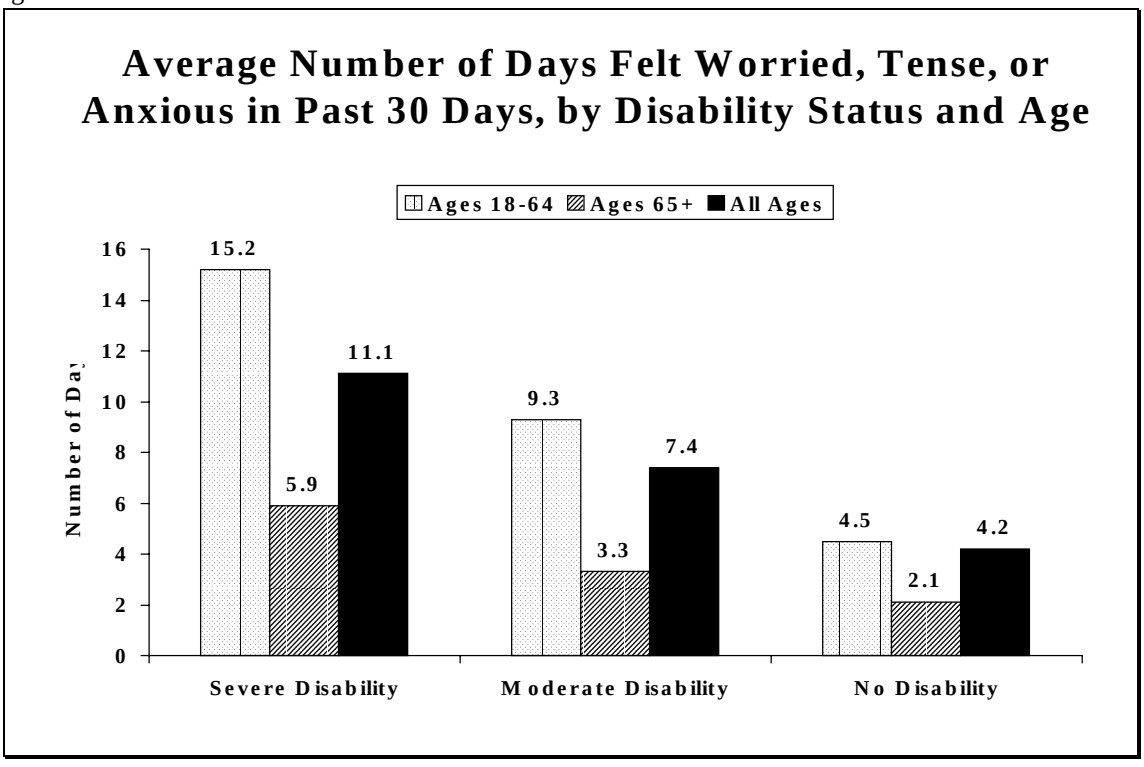
Average Number of Days with Anxiety

Figure 36 shows that the average number of days people felt worried, tense, or anxious in the past month varied substantially across the disability status and age group. The average number of days was higher among those with disabilities than people without disabilities; 11.1 days for people with severe disabilities, 7.4 days for people with moderate disabilities, and 4.2 days for people with no disabilities.

Within each disability category, elderly people reported fewer days where they felt worried, tense, or anxious than their younger counterparts. Among those with severe disabilities, the younger age group reported an average of 15.2 days, compared to 5.9 days for those 65 years and over. A similar pattern was seen among those with moderate disabilities. The results show that the older persons with disabilities were much less likely to have felt worried, tense or anxious than the younger persons with disabilities. The younger age group with severe disabilities reported the highest number of days.

Younger people with severe disabilities reported the highest average number of days with anxiety.

Figure 36



Vitality

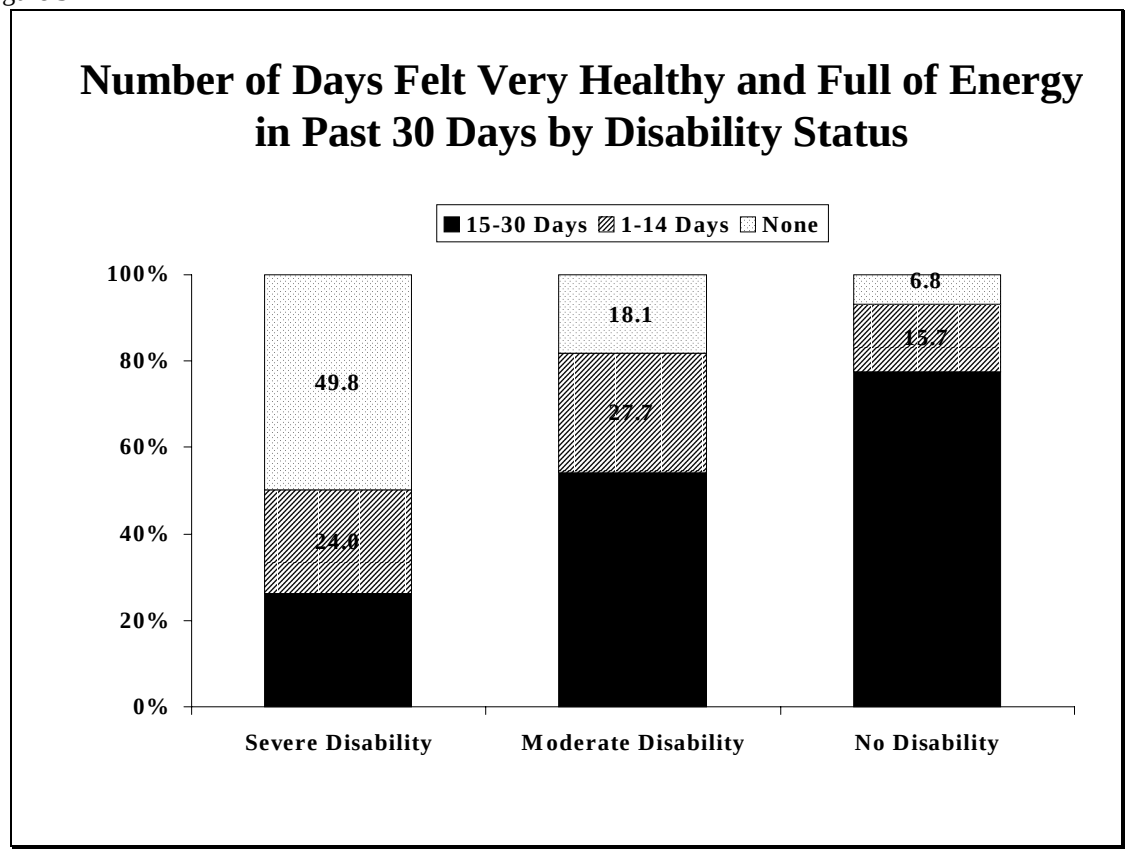
Q : "During the past 30 days, for about how many days have you felt VERY HEALTHY and FULL of ENERGY?"

Feeling very healthy or full of energy is an important indicator in measuring a person's general health and well-being.

As expected, people with disabilities had fewer very healthy days in the past month than people without disabilities (Figures 37 and 38). One half of people with severe disabilities (49.8%) reported that none of days in the past month did they feel very healthy or full of energy, compared to 18.1% of people with moderate disabilities and 6.8% of those with no disabilities (Figure 37). Similarly, 3 in 4 people without disabilities (77.5%) answered that they felt very healthy or full of energy more than 15 days in the past month, compared with only 1 in 4 people with severe disabilities (26.4%).

One half of people with severe disabilities reported that they never felt very healthy or full of energy in the past 30 days.

Figure 37



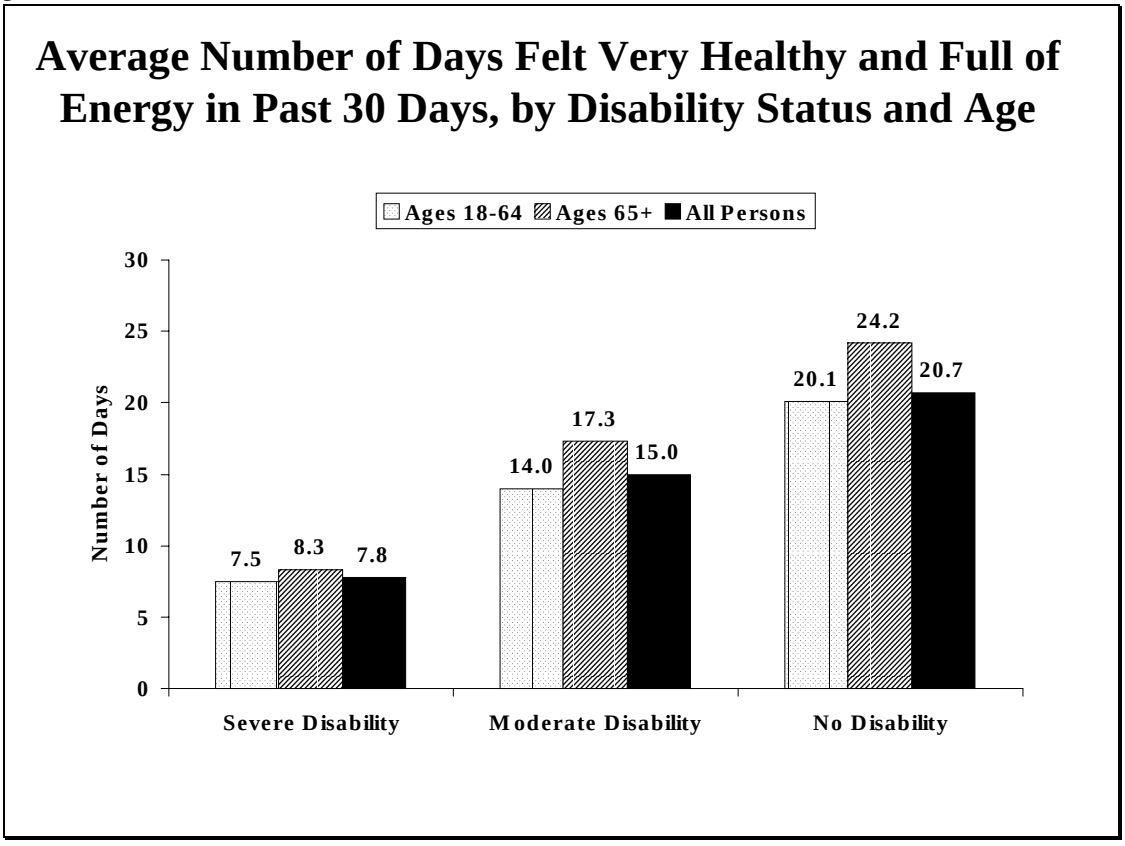
Average Number of Days with Vitality

Figure 38 shows the average number of days people felt very healthy and full of energy in the past month by disability status and age. The results revealed that, as expected, the average number of days with vitality was higher for those without disabilities than for those with disabilities. For all ages, 20.7 days were reported by people with no disabilities, 15.0 days by people with moderate disabilities, and 7.8 days were reported by people with severe disabilities.

Surprisingly, within each disability category, elders reported a slightly higher average number of days with vitality than their younger counterparts in all three categories of disability. Persons over 65 without disabilities reported the highest average number of days with vitality.

The average number of days people felt very healthy and full of energy in the past month was much lower for people with disabilities than people without disabilities.

Figure 38



REFERENCES

1. Office of Health Statistics. 1998 Rhode Island Behavioral Risk Factor Surveillance System. Rhode Island Department of Health, Providence, RI, 1998. Original Source: Behavioral Risk Factor Surveillance System. 1998 Survey Data. National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 1998.

2. National Center for Health Statistics. *Vital and Health Statistics: Current Estimates from the National Health Interview Survey, 1995*. Centers for Disease Control and Prevention. DHHS Pub. No.(PHS) 98-1527, 1998.

3. National Institute on Disability and Rehabilitation Research. *Chartbook on Disability in the United States*. Washington D.C.: the institute 1989.

4. Institute of Medicine (U.S.). *Disability in America: Toward a National Agenda for Prevention.* Washington, DC: National Academy Press, 1990.

5 U.S. Department of Health and Human Services. *Health, United States, 1998 with Socioeconomic Status and Health Chartbook*. Washington, DC: DHHS Pub. No.(PHS) 98-1232, 1998.

6 United States Department of Health and Human Services. *Healthy People 2000. National Health Promotion and Disease Prevention Objectives*. Washington, DC: DHHS Pub. No. (PHS) 91-50212, 1991.

7. Institute of Medicine (U.S.). *The Second 50 Years: Promoting Health and Preventing Disability*. Washington, DC: National Academy Press, 1990.

8. Nosek, M.A., Howland, C.A., Rintal, D.H., Young, M.E., and Chanpong, G.F. (1997). *National Study of Women with Physical Disabilities: Final Report*. Houston, TX: Center for Research on Women with Disabilities.

9. NIH. National Heart, Lung and Blood Institute. *Clinical Guidelines on the Identification, Evaluation, and Treatment of overweight and Obesity in Adults. The Evidence Report*. Reprint. June 1998.

10. Chan, L. et al. "Do Medicare patients with disabilities receive preventive services? A population based study," *Archives of Physical Medicine and Rehabilitation* 80 (1999): 642-646.

11. House, J.S. et al. "Social Relationships and Health," *Science* 241 (1988): 540-545.

12. Office of Health Statistics. “January-December 1998 Rhode Island Behavioral Risk Factor Surveillance System Survey: A Technical Description,” Rhode Island Department of Health, 1998.

13. Groves, R.M. *Survey Errors and Survey Costs*. New York: John Wiley & Sons, 1989.

Appendix : Methodology

Data Source

Measurement of Disability

Data Analysis

Limitations of the Study

METHODOLOGY

I. Data Source

The data source for this chartbook is the **1998 Rhode Island Behavioral Risk Factor Surveillance System (RIBRFSS).**[1]

The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing national effort, funded in all 50 states and 5 territories by the Centers for Disease Control and Prevention (CDC), to monitor the prevalence of behavioral risk factors for chronic diseases and other leading causes of death among adults in the United states. Rhode Island has participated since 1984.

The 1998 RIBRFSS consisted of a telephone interview of a representative sample of non-institutionalized Rhode Island adults aged 18 years and older. This survey excluded: (1) individuals in penal, mental, or other institutions; (2) individuals living in other group quarters such as dormitories, barracks, convents, or boarding houses, and (3) individuals living in a household without a telephone or using electronic telephone devices (i.e.,TDD or TTY). Each month during 1998, approximately 300 randomly selected Rhode Island adults in randomly sampled households were interviewed, for a total of 3,602 during the calendar year. Interviews were conducted in English, Spanish, or Portuguese depending on the respondent's preference. The survey produced an overall 56% response rate. Sampling and interviewing were performed by a professional survey organization "Macro International" under contract to the Department of Health, and followed the overall protocol from the CDC.[12]

The 1998 RIBRFSS questions focused on a variety of health-related topics, covering both knowledge and practices, regarding health status, health care access and utilization, diabetes, exercise, tobacco use, fruit and vegetable consumption, weight control, women's health, as well as demographic information. In 1998, the RI Disability and Health Program included in the BRFSS an expanded set of sixteen Disability/Quality of life questions in addition to CDC's standard quality of life module.

II. Measurement of Disability

Defining Disability

From the 1998 RIBRFSS disability/quality of life questions, all respondents were classified as one of the three categories; people with NO disability, with MODERATE disability, and with SEVERE disability. To do this, all respondents were classified into two categories first; with disability or without disability (A and B below). Then, those with disabilities were classified as either with severe or moderate disabilities (C and D below).

A. People with DISABILITY were defined as those who responded "yes" to at least one of the following four questions.

A1. Are you limited in the kind or amount of work you can do because of any impairment or health problem?
A2. Because of any impairment or health problem, do you have any trouble learning, remembering, or concentrating?
A3. Do you use special equipment or help from others to get around?
A4. Are you limited in any way in any activities because of any impairment or health problem?

B. People with NO disability were defined as those who responded "no" to all of the above questions.

C. People with SEVERE Disability were defined as those who responded positively to at least one of the following three questions AMONG those who have disabilities.

C1. Because of any impairment or health problem, do you need the help of other persons with your PERSONAL needs, such as eating, bathing, dressing, or getting around the house?
C2. Because of any impairment or health problem, do you need the help of other persons in handling your ROUTINE needs, such as everyday household chores, doing necessary business, shopping or getting around for other purposes?
C3. Using special equipment or help, what is the farthest distance that you can go? (Persons who cannot go more than one or two city blocks were included)

D. People with MODERATE Disability were defined as those who meet the criteria for disability but who do not meet the criteria for severe disability.

Measures of Disability

As stated earlier, four screener questions were asked of all survey respondents to identify people with a disability. Each question was designed to measure different types of a limitation. Persons who responded positively at least one of the following four questions were considered as having a disability.

Work Limitation

"Are you limited in the kind or amount of work you can do because of any impairment or health problem?"

Learning Difficulty

"Because of any impairment or health problem, do you have any trouble learning, remembering, or concentrating?"

Use of Aid

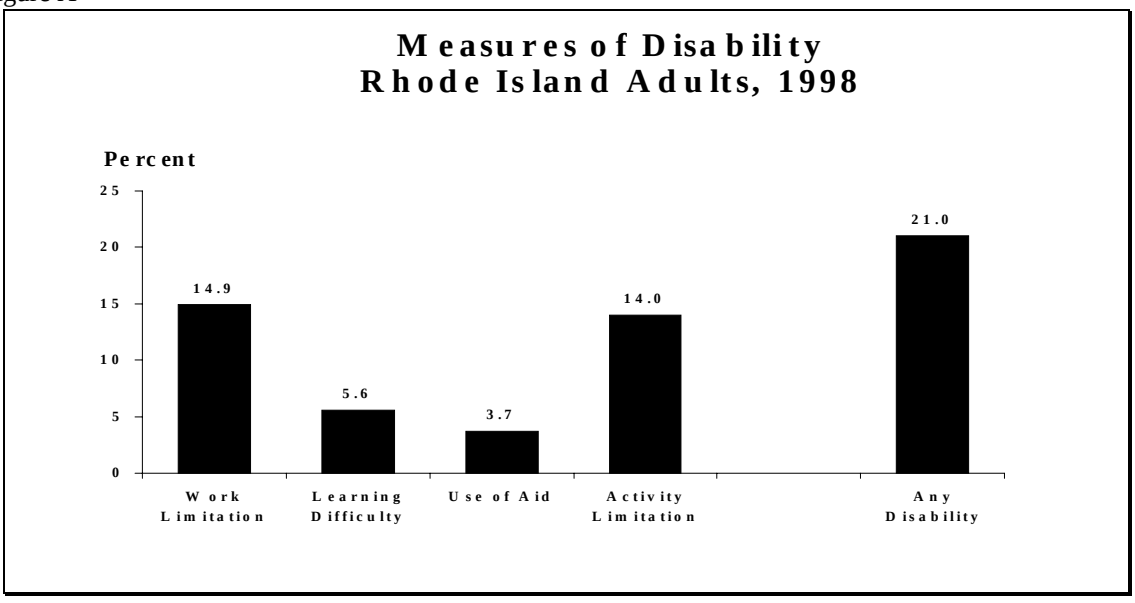
"Do you use special equipment or help from others to get around?"

Activity Limitation

"Are you limited in any way in any activities because of any impairment or health problem?'

14.9% of Rhode Island adults had a work limitation, 5.6% a learning problem, 3.7% used special equipment or help to get around, and 14.0% had an activity limitation. Overall, 21.0% of Rhode Island adults had at least one of the above limitations (Figure A).

Figure A



Measures of Severe Disability

To identify people with a severe disability, the following three questions were asked only of the 21% of Rhode Island adults who were identified as having a disability (Denominator is persons who have a disability).

Need Help for ADL (Activities of Daily Living)

"Because of any impairment or health problem, do you need the help of other persons with your PERSONAL CARE needs, such as eating, bathing, dressing, or getting around the house?"

Need Help for IADL (Instrumental Activities of Daily Living)

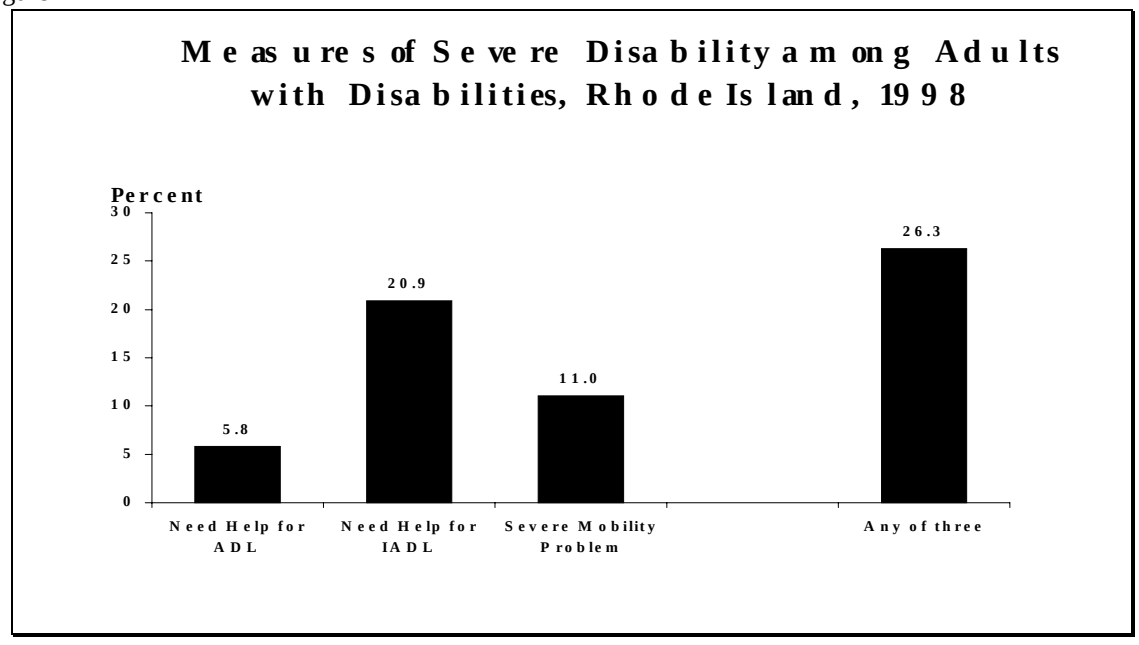
"Because of any impairment or health problem, do you need the help of other persons in handling your ROUTINE NEEDS, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?"

Severe Mobility Problem

"Using special equipment or help, what is the farthest distance that you can go?" Persons who cannot go more than one or two city blocks were included.

Among people with a disability, 5.8% reported that they needed help for an ADL, while 20.9% said they needed help for an IADL. 11.0% of people with a disability reported they could not go more than one or two city blocks, even using special equipment or help from others. Overall, 26.3% of people with disabilities had at least one of the above (Figure B). This number accounted for 5.5% of total Rhode Island adult population.

Figure B



Distribution of Sample by Disability Status

Using the above operational definition and measures, the 1998 RIBRFSS sample and weighted percentages were distributed as follows;

Table A. Distribution of Sample by Disability Status

	Number [1/]	Weighted %[2/]
People with Disabilities	**755**	**21.0**
Severe Disabilities	**224**	**5.5**
Moderate Disabilities	**531**	**15.5**
People with No Disabilities	**2,735**	**79.0**

[1/] 112 persons were excluded since they answered 'don't know' or 'refused' to disability screener questions.

[2/] The weighted percentages may differ from calculations using unweighted numbers (see next section III. Data Analysis).

Table B. Distribution of Survey Respondents by Age, Sex, and Disability Status (n=3,602)[1/]

	Severe Disability (n=224)		Moderate Disability (n=531)		No Disability (n=2,735)	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
18-44	20	49	83	124	655	890
45-64	18	42	73	82	310	449
65-74	11	24	35	57	74	168
75+	12	45	27	48	5	124
refused	0	3	1	1	2	18
Total	**61**	**163**	**219**	**312**	**1,086**	**1,649**

[1/] 112 persons were excluded since they answered 'don't know' or 'refused' to disability screener questions.

III. Data Analysis

All data analyses and data management was performed using SAS (Statistical Analysis System). Unless otherwise specified, individuals who answered that they did not know or refused to answer a question were excluded from the denominators when calculating the percentages. The exclusion of "don't know or refused" categories from denominators might slightly elevate the percentages in other categories. The subgroup analyses based on small sample sizes were presented using whole numbers.

All results presented in this report have been weighted to reflect the age, sex, and race distribution of the 1998 Rhode Island population estimates, so that the results from this survey could be generalized to the population of Rhode Island.

Some of the variables in this report are interrelated. For example, people with disabilities tend to be older than people without disabilities, and age is an important determinant for many health-related conditions and health behaviors. So, the comparisons between people with and without disabilities on any behavior/condition that is strongly related to age will be biased. In this report, an attempt was made to reduce the effect of age differences across the disability status, by reporting those below and above age 65 separately for some variables. Associations among variables need to be controlled to identify the independent effect of each variable. However, it is beyond the scope of this report to adjust for all of other confounding variables. Therefore, the reader needs to be aware of potential interactions between variables when interpreting the results presented here.

IV. Limitations of the Study

The population from which the 1998 RIBRFSS sample was drawn was the total non-institutionalized Rhode Island population living in the state most of the year and residing in telephone-equipped households. By excluding people who live in institutional facilities, such as nursing homes or residential facilities for people with developmental disabilities and people with mental illness, the estimated number of people with disabilities might be underrepresented.

Another limitation is the lack of coverage of the population who live in households without telephones and the population who cannot answer the phone due to communication impairments or other health problems. Those who live in households without telephones are more likely to have lower family incomes.[13] Our survey revealed that people living in low-income households were much more likely to have disabilities than people with higher incomes. Therefore, the exclusion of the population who live in households without a telephone, and those who cannot answer the phone because of communication problems or other health problems might again contribute to an under-representation of those with disabilities.

Another potential source of error results from the self-reported nature of these data. It would be expected that respondents might underreport health risk behaviors, and especially those conditions that are socially unacceptable, such as obesity, mental disorders or depression. Disability has a negative social image and could be underreported. These factors might also contribute to an under-representation of those with disabilities in this survey.